CANADIAN THESES ON MICROFICHE

I.S.B.N.

THESES CANADIENNES SUR MICROFICHE

National Library of Canada
Collections Development Branch

Canadian Theses on
Microfiche Service

Ottawa, Canada
K1A 0N4

Bibliothèque nationale du Canada
Direction du développement des collections

Service des thèses canadiennes
sur microfiche

NOTICE

The quality of this microfiche is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

If pages are missing, contact the university which granted the degree.

Some pages may have indistinct print especially if the original pages were typed with a poor typewriter ribbon or if the university sent us a poor photocopy.

Previously copyrighted materials (journal articles, published tests, etc.) are not filmed.

Reproduction in full or in part of this film is governed by the Canadian Copyright Act, R.S.C. 1970, c. C-30. Please read the authorization forms which accompany this thesis.

THIS DISSERTATION
HAS BEEN MICROFILMED
EXACTLY AS RECEIVED

AVIS

La qualité de cette microfiche dépend grandement de la qualité de la thèse soumise au microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

S'il manque des pages, veuillez communiquer avec l'université qui a conféré le grade.

La qualité d'impression de certaines pages peut laisser à désirer, surtout si les pages originales ont été dactylographiées à l'aide d'un ruban usé ou si l'université nous a fait parvenir une photocopie de mauvaise qualité.

Les documents qui font déjà l'objet d'un droit d'auteur (articles de revue, examens publiés, etc.) ne sont pas microfilmés.

La reproduction, même partielle, de ce microfilm est soumise à la Loi canadienne sur le droit d'auteur, SRC 1970, c. C-30. Veuillez prendre connaissance des formules d'autorisation qui accompagnent cette thèse.

LA THÈSE A ÉTÉ
MICROFILMÉE TELLE QUE
NOUS L'AVONS REÇUE

NL-339 (r. 82/08)

Canada

255

0-315-12566-7

National Library of Canada
Canadian Theses Division
Ottawa, Canada
K1A 0N4

Bibliothèque nationale du Canada
Division des thèses canadiennes

60477

PERMISSION TO MICROFILM — AUTORISATION DE MICROFILMER

- Please print or type — Écrire en lettres moulées ou dactylographier

Full Name of Author — Nom complet de l'auteur
Bernard Lawrence Potvin

Date of Birth — Date de naissance
April 5 /1950

Country of Birth — Lieu de naissance
Canada

Permanent Address — Résidence fixe
9821 - 91 avenue

Title of Thesis — Titre de la thèse

University — Université
University of Alberta

Degree for which thesis was presented — Grade pour lequel cette thèse fut présentée
M.Ed

Year this degree conferred — Année d'obtention de ce grade
1982

Name of Supervisor — Nom du directeur de thèse
Janette Vallance

Permission is hereby granted to the NATIONAL LIBRARY OF CANADA to microfilm this thesis and to lend or sell copies of the film.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

L'autorisation est, par la présente, accordée à la BIBLIOTHÈQUE NATIONALE DU CANADA de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans l'autorisation écrite de l'auteur.

Date
October 15

Signature
Bernie Potvin

NL-91 (4/77)

THE UNIVERSITY OF ALBERTA

THE RELATIONSHIP OF ELEMENTARY SCHOOL GYMNASTIC CURRICULUM DESIGNS TO TEACHER ATTITUDE AND PERCEIVED KNOWLEDGE

by

Ⓒ BERNIE L. POTVIN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE

DEGREE OF MASTER OF EDUCATION

DEPARTMENT OF ELEMENTARY EDUCATION

EDMONTON, ALBERTA

FALL, 1982

Microfilming

THE UNIVERSITY OF ALBERTA

RELEASE FORM

NAME OF AUTHOR Bernie L. Potvin

TITLE OF THESIS The Relationship of Elementary School Gymnastic Curriculum Designs to Teacher Attitude and Perceived Knowledge

DEGREE FOR WHICH THESIS WAS PRESENTED Master of Education

YEAR THIS DEGREE GRANTED 1982

Permission is hereby granted to THE UNIVERSITY OF ALBERTA LIBRARY to reproduce single copies of this thesis and to lend or sell such copies for private, scholarly or research purposes only.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

(Signed) Bernie Potvin

PERMANENT ADDRESS:

8011 - 136 Avenue,
Edmonton, Alberta

DATED October 15 1982

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "The Relationship of Elementary School Gymnastic Curriculum Designs to Teacher Attitude and Perceived Knowledge" submitted by Bernie L. Potvin in partial fulfilment of the requirements for the degree of Master of Education.

Janette Vallance
Supervisor

Linda Thompson

Jean H. Young

Date Oct. 14th 1982

ABSTRACT

The purpose of this study was to examine the relationship between selected designs of curricula and teacher attitudes toward elementary school gymnastics and perceived knowledge regarding the theme of balance at the Grade Four level.

Attitude and perceived knowledge questionnaires were used in a pretest and posttest situation around teacher's implementation of a selected curriculum design. Interviews were conducted to probe further into teachers' use of their curriculum and to verify the results from the questionnaires.

The indications from this study were that more specific and detailed designs of curricula appear to be the most influential in affecting teacher attitudes and perceived knowledge. The valuing of a curricular design as an aid in decision-making depends largely on the individual teacher's needs, preferences and implementation strategies used with the curriculum.

ACKNOWLEDGEMENTS

The author gratefully acknowledges the assistance provided by Professor Jan Vallance in the completion of this study. The author wishes to thank the other committee members, Dr. Jean Young and Professor Linda Thompson, for their patience, suggestions and direction.

Sincere thanks are extended to Dr. Joyce Boorman for encouragement during the writing of the thesis.

TABLE OF CONTENTS

CHAPTER PAGE

1 PURPOSE OF THE STUDY 1

Introduction 1

Background to the Study. 1

Purpose of the Study 4

Methodology Used in the Study. 5

Significance of the Study. 6

Scope of the Study 7

Limitations of the Study 8

Definition of Terms. 9

Organization of the Study. 11

2 A REVIEW OF RELATED LITERATURE 12

Introduction 12

Curriculum 12

Curriculum Design. 13

Application to the Study 17

Curriculum Implementation. 18

Application to the Study 25

Elementary School Gymnastics 27

The Structure of Gymnastics Content. 27

Application to the Study 32

Theory and Methods of Measuring Attitudes. 32

Application to the Study 34

Theory and Methods of Measuring Knowledge. 34

CHAPTER PAGE

Application to the Study 37

Theory and Methods of Gathering Interview Information. 37

Application to the Study 38

Summary. 39

3 THE DESIGN OF THE STUDY. 40

Introduction 40

Development of Curricula 40

Development of the Attitude Questionnaire. 44

Validation Procedure - Stage 1 45

Validation Procedure - Stage 2 46

Validation Procedure - Stage 3 46

Validation Procedure - Stage 4 47

Validation Procedure - Stage 5 48

Development of the Perceived Knowledge Questionnaire. 48

Validation Procedure - Stage 1 49

Validation Procedure - Stage 2 49

Validation Procedure - Stage 3 50

Validation Procedure - Stage 4 50

Posttest In-person Interviews. 51

Posttest Telephone Interviews. 52

The Sample 53

Data Collection Procedures 55

Summary. 56

4 ANALYSIS OF THE DATA 57

Introduction 57

CHAPTER PAGE

Description of Responses to the Attitude Questionnaire 59

Description of Responses to the Perceived Knowledge Questionnaire 108

Description of Responses to the In-person Interviews. 150

Description of Responses to the Telephone Interviews. 185

5 DISCUSSION OF THE FINDINGS, CONCLUSIONS, SUMMARY AND RECOMMENDATIONS 195

Introduction. 195

Discussion of the Findings. 196

Attitudes 196

Curriculum A. 196

Curriculum B. 198

Curriculum C. 198

Perceived Knowledge 199

Curriculum A. 199

Curriculum B. 200

Curriculum C. 201

Curriculum Design 201

Curriculum A. 201

Curriculum B. 202

Curriculum C. 203

Conclusions to the Research Questions 204

Question 1. 204

Question 2. 204

Question 3. 204

Additional Conclusions. 205

CHAPTER PAGE

Summary of the Study. 206

Recommendations 208

Recommendations for Further Study 208

Recommendations for Curriculum Design 208

Recommendations for Gymnastics. 209

BIBLIOGRAPHY 211

APPENDICES 217

Appendix A - Curriculum Components Common to the Three Curricula 218

Appendix B - Unique Component of Curriculum A: Eight Lesson Plans. 243

Appendix C - Unique Component of Curriculum B: Theme Material. 264

Appendix D - Unique Component of Curriculum C: Sample Lesson. 271

Appendix E - Outline of Explanation and Questions for Construct Validation of Curricula 275

Appendix F - Validators. 284

Appendix G - Outline of Explanation and Questions for Content Validation of Curriculum. 288

Appendix H - Five Categories - Attitudes 305

Appendix I - Original Twenty-Three Components and Validation Weightings 307

Appendix J - Final Sixteen Components. 313

Appendix K - Original Ninety-Five Attitude Items 316

Appendix L - Validation Questionnaire. 326

Appendix M - Attitude Questionnaire. 328

Appendix N - List of Twelve Components Regarding Perceived Knowledge of Balance. 333

Appendix O - Perceived Knowledge Components and Questionnaire Items 335

CHAPTER PAGE

Appendix P - Perceived Knowledge Questionnaire 340

Appendix Q - In-Person Interview Questionnaire 345

Appendix R - Telephone Interview Questionnaire 349

LIST OF TABLES

TABLE PAGE

1 Analysis of Sample of Teachers 54

Attitude Questionnaire: A Comparison of Changes from Pretest to Posttest for all Attitude Questions: Tables of Responses:

2 Pretest and Posttest Responses to Question 8 60

3 Pretest and Posttest Responses to Question 23. 61

4 Pretest and Posttest Responses to Question 10. 63

5 Pretest and Posttest Responses to Question 9 65

6 Pretest and Posttest Responses to Question 27. 66

7 Pretest and Posttest Responses to Question 28. 67

8 Pretest and Posttest Responses to Question 15. 69

9 Pretest and Posttest Responses to Question 26. 70

10 Pretest and Posttest Responses to Question 4 72

11 Pretest and Posttest Responses to Question 19. 73

12 Pretest and Posttest Responses to Question 24. 75

13 Pretest and Posttest Responses to Question 1 76

14 Pretest and Posttest Responses to Question 16. 78

15 Pretest and Posttest Responses to Question 29. 79

16 Pretest and Posttest Responses to Question 2 81

17 Pretest and Posttest Responses to Question 11. 83

18 Pretest and Posttest Responses to Question 17. 84

19 Pretest and Posttest Responses to Question 7 86

20 Pretest and Posttest Responses to Question 21. 87

21 Pretest and Posttest Responses to Question 12. 89

22 Pretest and Posttest Responses to Question 6 91

TABLE PAGE

23 Pretest and Posttest Responses to Question 25 92

24 Pretest and Posttest Responses to Question 18 94

25 Pretest and Posttest Responses to Question 22 95

26 Pretest and Posttest Responses to Question 5 97

27 Pretest and Posttest Responses to Question 14 98

28 Pretest and Posttest Responses to Question 3 100

29 Pretest and Posttest Responses to Question 13 101

30 Pretest and Posttest Responses to Question 20 103

31 A Comparison of Changes from Pretest to Posttest for all Knowledge Questions: Tables of Responses 105

32 Pretest and Posttest Responses to Question 7 110

33 Pretest and Posttest Responses to Question 19 112

34 Pretest and Posttest Responses to Question 1 113

35 Pretest and Posttest Responses to Question 8 115

36 Pretest and Posttest Responses to Question 15 116

37 Pretest and Posttest Responses to Question 18 118

38 Pretest and Posttest Responses to Question 20 120

39 Pretest and Posttest Responses to Question 9 121

40 Pretest and Posttest Responses to Question 13 123

41 Pretest and Posttest Responses to Question 10 124

42 Pretest and Posttest Responses to Question 23 126

43 Pretest and Posttest Responses to Question 2 127

44 Pretest and Posttest Responses to Question 17 129

45 Pretest and Posttest Responses to Question 14 131

46 Pretest and Posttest Responses to Question 3 132

47 Pretest and Posttest Responses to Question 16 134

TABLE PAGE

48 Pretest and Posttest Responses to Question 4 136

49 Pretest and Posttest Responses to Question 11 137

50 Pretest and Posttest Responses to Question 5 139

51 Pretest and Posttest Responses to Question 12 140

52 Pretest and Posttest Responses to Question 24 142

53 Pretest and Posttest Responses to Question 22 143

54 Pretest and Posttest Responses to Question 6 144

55 Pretest and Posttest Responses to Question 21 146

56 Comparison of Changes: Pretest to Posttest for all Perceived Knowledge Questions 147

Chapter 1

PURPOSE OF THE STUDY

Introduction

It was the purpose of this study to examine the relationship between selected designs of curricula and 1) teacher attitudes toward elementary school gymnastics at the Grade Four level and 2) teachers' perceived knowledge regarding the theme of balance.

Background to the Study

"Studies are needed to show with rigor and precision how best to arrange (curriculum) materials for effective teaching" (Goodlad, 1966, p. 137). The value to teachers of curricula developed for use in elementary school gymnastics needs study.

Gymnastics education in the elementary school has undergone considerable change. This change has related to content and teaching methods with an increased emphasis on a movement education approach. Movement education has been defined as "A process through which a child gains an appreciation and an understanding of functional and expressive movement" (Lumby, 1980, p. 48). Kruger and Kruger (1977) stated,

> (Movement education) embraces the content, methods and objectives of a creatively oriented learning experience that seeks to develop learner awareness of where and how the body moves to fulfil some expressive or functional purpose (p. 13).

The content implied in the movement education approach to teaching gymnastics is the universal set of functional skills which underlie all physical movement (Kirchner, 1978; Kruger and Kruger, 1977). The method of teaching encouraged in elementary school gymnastics is one of problem-solving (Mauldon and Layson, 1979; Williams, 1979). The most recent literature has encouraged teachers to use movement themes to provide focus and to present movement experiences to children in gymnastics (Mauldon and Layson, 1979; Morison, 1969; Williams, 1974). A theme is " . . . a particular aspect of movement chosen by the teacher as the focal point round which he can build a series of lessons" (Williams, 1974, p. 13).

There are indications that gymnastics, as outlined in selected curricula, has not been implemented as intended (Bell, 1974; Thompson, 1979). Research by Bell (1974) suggested that teachers have not always planned objectives for gymnastics. His research indicated that except when teachers are using curricula designed in lesson plan format prepared by supervisors, few teachers plan specific objectives for their lessons. Thompson (1979) indicated that one curricular source for teachers, the Elementary Physical Education Curriculum Guide (Alberta Department of Education, 1969), has not been effective in helping teachers plan for and implement the gymnastics dimension of elementary school physical education. There are indications that other types of available curricular sources such as textbooks and resource units have not been effective in helping teachers with gymnastics. "Textbooks, where available, enable the reader to carry out a sensible program of movement education within the framework of physical education as it is constituted today" (Kruger and Kruger, 1977, p. xii). They do not appear to be as readily accessible a curricular source, and, as a result, have limited influence on gymnastics programs.

Curricula, designed in lesson plan format, are made available by school systems in this province's larger urban centers. The Red Deer Public School System developed a series of sequential lesson plans in each of the dimensions of the elementary school physical education program (Red Deer Public School District, P.E.P., 1978). The choice of this type of curricular design was based on the decision by the developers that generalist teachers would best be served by lesson plans. There are indications that implementation practices made use of this type of curricula, even though teachers seem to prefer prepared units of lessons as guides in their planning (Thompson, 1979). Other curricula, in designs which are less specific and prescriptive, are available in other school systems (Calgary Public School System - P.E.E.R., 1976; Calgary Separate School Board, Cal. Sep. P.E.P., 1978). Up to this time, little study has been undertaken into the relationship between the design of curricula used in school systems for teaching the dimensions of the elementary school physical education program and implementation practices. Thompson (1979) moved in this direction by examining teacher preferences regarding design of curricula. While it appeared from her study that teachers preferred curricula in designs which are prescriptive (i.e. prepared units of lessons), no implementation of curricula occurred. As a result, little insight resulted from the influence of designs of curricula in relation to implementation. This current study attempted to examine this relationship.

It is recognized by the researcher that curricular design is only one factor influencing implementation. Fullan and Pomfret (1977) have suggested that, while conceptual development of an implementation theory is required which goes beyond derived determinants of implementation, examination of determinants of implementation is nonetheless useful.

They proposed that there are at least two characteristics of innovations which can be viewed as determinants of implementation; explicitness associated with the innovations, and complexity. The implication is that research in implementation should continue to focus on curricular explicitness and complexity. The researcher attempted an initial step in this direction by examination of the relationship of the designs of three curricula to teacher attitudes and knowledge towards elementary school gymnastics and the theme of balance at the Grade Four Level. The basic difference being the specificity of teaching material provided in each curriculum where the explicitness and content complexity varied among three curricula.

Curricula provide the content of a course in written format and are sources for a teacher's selection and organization of content. Poll (1970) has stated, " . . . curricula are to be used by classroom teachers as points of departure for planning educational experience" (p. 6). Bjork (1970) stated that " . . . the purpose of curriculum implementation is to have teachers use the curriculum as the point of departure for teaching" (p. 46). It is apparent that unless curricula are effective in assisting teachers in implementation, then the curricula are of little value.

Purpose of the Study

It was the purpose of this study to examine the relationship of selected curriculum designs to teachers' attitudes towards gymnastics and perceived knowledge regarding the gymnastics theme of balance. The following questions provided the framework on which the research was based

1. Does the design of gymnastics curricula have a relationship

to teacher attitudes towards elementary school gymnastics?

2. Does the design of gymnastics curricula have a relationship to teachers' perceived knowledge regarding the theme of balance?
3. How do teachers perceive and value selected curricula provided to assist their decision-making in the implementation process?

Methodology Used in the Study

1. Three designs of curricula were developed on the gymnastics theme of balance for Grade Four teachers, the basic difference between the three designs being the specificity of teaching material provided in each curriculum. This specificity was determined by the amount of theme material provided, the degree of detail provided, and the arrangement of the teaching material.
2. This study was designed to examine the relationship between selected designs of curricula and teacher attitudes towards elementary school gymnastics prior to and after implementation of a selected curricular format. This required the development and validation of an attitude questionnaire.
3. This study was designed to examine the relationship between selected designs of curricula and teachers' perceived knowledge regarding the gymnastics theme of balance prior to and after implementation of a selected curricular format. This required the development and validation of a perceived knowledge questionnaire regarding balance.
4. This study was designed to use interviews to probe into teachers' implementation of a selected curricular format. This required the development and validation of an interview schedule, one which would

verify and validate the results from the questionnaires.

5. The sample of thirty teachers was selected from the Grade Four classroom teachers teaching in the Edmonton Public School System. Teachers selected were non-specialists who were teaching just their own classroom physical education. The sample was randomly divided into three groups of ten teachers for implementation of the three designs of curricula.
6. Teachers implemented their curricula over a four week period, teaching two gymnastics classes a week on the theme of balance. Prior to and after implementation, the attitude and perceived knowledge questionnaires were administered. Interviews were conducted after implementation.
7. The responses from the questionnaires have been recorded on tables which appear in Chapter 4. A summary of responses for each question is included. This describes the differences between the pretest and posttest for users of each curricula. As well, this summary includes descriptions of responses in the posttest, comparing the results of users of each curricula.

Significance of the Study

A variety of curricular designs has been made available to classroom teachers for implementation of physical education program dimensions. There appears to be some agreement by selected authors on certain tasks involved in developing curriculum (Beauchamp, 1975; Goodlad, 1966; Taba, 1962). But questions remain on how teaching material can best be arranged and curriculum designed in physical education for the non-specialist teacher which will positively influence teaching. It remains an area in which research is lacking.

Curriculum development decisions require clear specification which can come from knowledge of the effect on teachers of the designs of curricula. This may well eliminate the need to " . . . make arbitrary decisions about what the curriculum shall comprise" (Almond, 1976, p. 109). From such knowledge, models underlying curriculum design decisions may be developed, not only for physical education subjects such as gymnastics, but for academic subjects as well. As Almond (1976) has stated:

> Only when we have a better understanding of what we can do in the teaching context will we be in a position to make proposals for change which are based on what is possible rather than theories, ideologies and slogans which are out of touch with the realities of the classroom (p. 104).

Scope of the Study

1. The study was delimited to one theme in each curriculum - the theme of balance. This theme was chosen for its appropriateness for children at a Grade Four level.
2. The study was delimited to the selection of three designs of curricula, with the specificity and arrangement of theme material provided in one component being the variables which differed among each design of curricula. The three designs chosen were considered representative of the gymnastics curricula most prevalent and available to the researcher.
3. The study was delimited to Grade Four classroom teachers who volunteered for the study, and had no more than one university level course in movement education. The minimum requirement for movement education in Alberta continues to be one course. Teachers chosen

were teaching their own physical education class and were considered non-specialists in elementary school physical education. The present situation in schools indicates that elementary school classroom teachers will be expected to continue to teach their own physical education.

4. The study was delimited to perceived knowledge rather than actual knowledge. This was done to put the teachers in a self-assessment type of situation, eliminating any pressure they might have felt if assessed by the researcher.

Limitations of the Study

1. The study was limited to the teachers who volunteered for the study. This may have meant that only teachers who were favourable to physical education volunteered, influencing the results.
2. The study was limited by teachers' interpretations and choices of implementation strategies of teaching material within each curriculum. This may have influenced the results achieved by children which in turn affected attitudes and perceived knowledge.
3. The study was limited by individual teachers' abilities and experiences in presenting the gymnastic themes, and by children's abilities and experiences in introductory themes and in the theme of balance. This may have resulted in varying levels of perceived success in realizing curricular objectives.
4. This study was limited to a survey of attitudes and perceived knowledge. A more complete study of teacher implementation practice would have included a study of teacher performance. A lack of time mitigated against a performance assessment in this study.

Definition of Terms

Movement Education	- A term which embraces the content, methods and objectives of a creatively-oriented learning experience that seeks to develop learner awareness of where and how the body moves to fulfil some expressive or functional purpose (Lumby, 1980, p. 48).
Elementary School Gymnastics	- A program dimension included in the Alberta Curriculum Guide (Elementary Physical Education, 1969). Its aims are to develop skilled and efficient use of the body in practical situations, and to understand and appreciate objective movement with an ability to invent and select appropriate actions.
Theme	- " . . . is a particular aspect of movement chosen by the teacher as the focal point round which he can build a series of lessons" (Williams, 1974, p. 13).
Balance	- "This theme involves the experience of holding the body in stillness while decreasing the area of the

weight-bearing surface as far as possible" (Williams, 1979, p. 43).

Curricula - Documents prepared by selected school-related personnel, including curriculum specialists and teachers, revealing the intention of the school-related personnel with respect to goals and subject matter to be implemented. They are intended to be tools for use by teachers in developing their teaching strategies. Curricula may include textbooks, curriculum guides and units of lesson plans.

Curriculum Design - " . . . the basic organization and plan for action for developing the scope and sequence of subject matter. Any curriculum design reflects a theoretical position" (Jewett and Mullan, 1977, p. 1).

Components - Parts of a curriculum, which, for heuristic purposes, constitute the curriculum.

Attitude - The way individuals act and think toward people, objects and situations they encounter.

Perceived Knowledge	- What a teacher thinks or feels his/her knowledge is about a topic.
Division Two	- Grades Four, Five and Six in the Province of Alberta.

Organization of the Study

Chapter 1 discusses the purpose of the study. Background information to the study, purpose of the study, significance of the study, definition of terms, outline of the study, and limitations and scope of the study are presented as well.

Chapter 2 discusses the literature pertinent to the study, andoutlines the rationale for the design of the resource. The design of the attitude and perceived knowledge scales, and the design of the final interview questionnaire are discussed in Chapter 3. The findings from the teacher use of the selected curricula, their responses to the scales and to the interview questionnaire are presented in Chapter 4. Chapter 5 presents the conclusions to the study.

Chapter 2

A REVIEW OF RELATED LITERATURE

Introduction

This chapter presents a review of literature. It is organized around five general topics:

1. Curriculum development theory, with an emphasis on curriculum design.
2. Elementary school gymnastics, with an emphasis on the structure of gymnastics content and design of elementary school gymnastics curricula.
3. Theory regarding attitudes, with a review of methods of gathering information regarding attitudes.
4. Theory regarding knowledge, with a review of methods of gathering information regarding knowledge.
5. Theory regarding interviews, with an emphasis on methods of gathering information through interviews.

This chapter provides the theoretical foundation of the study.

Curriculum

Areas related to curriculum development and implementation were reviewed. This was done to provide the researcher with an overview of curriculum thought which has influenced decisions regarding design and curriculum. Beauchamp (1975) has suggested that a curriculum is a written document, and the developers of a curriculum provide for the careful organization of content and methodology to provide one influence on learning environments. They accommodate a well-defined role function. Schaffarzick (1975) stated:

> It is generally recognized that curriculum developers do not create new knowledge in the course of their work. Instead, what they do accomplish is to select facts, ideas and concepts that are already acquired . . . and to create new and more effective ways of communicating this selected knowledge through the creation of new embodiments, new learning approaches, or both (p. 233).

Shaffarzick (1975) has suggested that developers often make procedural decisions solely on the basis of personal preference. Therefore, what is needed is a sharpened technology by which such materials are produced.

Curriculum Design

The initial area of review concerned curriculum design issues. Ulrich et al., (1972) have stated: "The curriculum is the heart of the teaching-learning process. Basic to construction of any curriculum is the creation of the design to be used" (p. 11). Regarding curriculum design, Jewett and Mullan (1977) have stated:

> The term curriculum design is considered most descriptive of current efforts in developing curriculum theory or subtheories. A curriculum design is defined as the basic organization and plan for action for developing the scope and sequences of subject matter. Any curriculum design reflects a theoretical position (p. 1).

Beauchamp (1975) suggested that the design of curriculum should include objectives, subject outlines, instructional materials and pupil activities. Taba's (1962) theoretical curriculum planning position included questions concerning formulating objectives, identifying educational experiences, organizing the experiences and evaluation.

A critical task in the development of a curriculum design is the " . . . identification and choice of components or dimensions of an innovation" (Leithwood, 1981, p. 13). Curriculum developers can " . . . find the dimensions useful in determining the focus of their design decisions" (Leithwood, p. 13). Leithwood (1981) suggested that, for heuristic purposes, the dimensions or set of components of a curriculum may be taken as a definition of the major parameters of a "complete" curriculum. Leithwood also identified nine components: (p. 9)

1. Platform
2. Objectives
3. Student entry behaviors
4. Assessment tools and procedures
5. Instructional material
6. Learner experiences
7. Teaching strategies
8. Content
9. Time (p. 27)

In Leithwood's (1981) framework, the platform component is implicit in and underlies other components. This is " . . . the system or patterns of implicit and explicit beliefs accepted as the basis for decisions about what to include and exclude from a curriculum" (p. 27).

Other factors, besides the choice of components to be used in curriculum, influence design decisions. Studies concerned with implementation of externally prepared curricula have provided insight into some of these curriculum design issues. They have included assessment of determinants of implementation (Fullan and Pomfret, 1977), determination of degree of implementation or levels of use of curriculum (Hall and Loucks, 1977), and factors affecting implementation (Crowther, 1972; Rogers and Shoemaker, 1971). In assessment of determinants of implementation, the characteristics of curriculum materials being designed have been suggested as factors which influence implementation (Fullan and Pomfret, 1977). Designers need to include explicitness and complexity. With regard to explicitness, Fullan and Pomfret (1977) have suggested that the essential features of curricula, the specification by developers of characteristics or attributes, are significant. With regard to the complexity, they have stated: " . . . (complexity) means the degree of complexity or difficulty in using the innovation" (p. 370). Rogers and Shoemaker (1971) have proposed that complexity be measured as perceived complexity by potential users. Fullan and Pomfret (1977) proposed that a type of relationship exists between complexity and explicitness: "It is likely that complexity affects explicitness, that is, the greater the complexity, the more difficult it is to be explicit about the operational characteristics. . . ." (p. 371).

Hall and Loucks' (1977) "levels of use" framework has provided a useful tool to curriculum developers for what Leithwood (1981) terms the " . . . identification of desirable end-points or goals for implementation, and stages of development toward those end-points" (p. 25). Leithwood (1981) proposed looking at curriculum in terms of its design components and suggested that curriculum developers may find the process of assessing levels of use of particular components useful in determining the foci of their design decisions. This may influence such curriculum design variables as length, breadth and organizational structure.

Implicit in the area of curriculum design are two aspects: curriculum developer intentions and individual teacher needs. Connelly (1974) referred to curriculum developer intentions as " . . . the instructional design requirements of the original producers. . . ." (p. 16). What did the developer intend through the design of the curricula and how may the intentions be assessed?

Connelly (1974) has outlined guiding principles which serve as guides for analysis of curriculum:

> (1) the recognition of the intentions of curriculum developers, and the discovery of both explicit and implicit objectives in the program, whether it is one clear assumption or not; (2) the examination of the expression of these intentions and objectives in the prepared material. That is, did they write good materials to begin with? Is it a good idea? Does it show up in the material? Then does it show up subsequently in what they call the technical reality; (3) the classification of the vital conditions for implementation and efficient ways to achieve stated objectives is another theme running through these evaluation models; (4) the judgement of these programs as to their quality. Here the criterion of quality is bureaucratization of goals and objectives. Evaluators look for goals that are stated in very clear, specific, precise terms, consistent with logical reorganization, range of compatibility, various target populations, cost of implementation and so on (p. 16).

The second aspect, individual teacher needs, is concerned with teacher professional growth and the concerns and needs of teachers at different stages, according to Kass and Wheeler, (1975). They postulated three stages of teacher professional growth. At each stage, teachers have varying needs, their personal requirements in developing an effective unit reflects their stages of growth. The stage one teacher is "teacher-centered", concerned with achieving adequacy and security. The stage one teacher is characterized by a high degree of directiveness and domination of classroom activities. The stage two teacher is at a content-structure-centered stage, concerned over instructional strategies and what is to be taught. The structure of the subject matter frequently serves as the theoretical framework for teaching at this stage. The stage three teacher is at a student-centered stage, concerned over individual learning problems. The stage three teacher is characterized by allowing experiment on and exploration with a high degree of concern placed on growth and learning problems.

The assumption that teachers have varying needs provided a framework on which design decisions were made for the curricula used in this study. Three designs of curricula in varying degrees of specificity were prepared for teacher use in this study.

Application to the Study

Three designs of curricula were developed to give teachers information for implementation of the gymnastics theme of balance. Each design was developed so teachers could select implementation strategies according to their varying needs and stage of professional growth (Kass and Wheeler, 1975). The designs, as well, reflected theoretical positions discussed earlier, i.e. identification and choice of curricular components to be used in each curricula (Leithwood, 1981), curriculum planning decisions concerning formulating objectives, identifying educational experiences, organizing these experiences and evaluation (Taba, 1962; Beauchamp, 1975), and consideration for curricular characteristics of explicitness and complexity as determinants of implementation (Fullan and Pomfret, 1977).

The basic difference among the three designs of curricula was in the degree of specificity of each. One design was very detailed and specific with eight progressive lesson plans included as the unique component. The choice of a lesson plan design was based on a study by Thompson (1979) in which teachers indicated a preference to use this design of curriculum to develop units. The researcher believed that the choice of this type of curricular design would be valid also because of the proposed use of lesson plan type formats for curriculum being developed in school systems such as the Red Deer Public School District (Red Deer Public School District, P.E.P., 1978).

The second design chosen was to arrange teaching material in a somewhat less specific and detailed format. The design had selected teaching material outlined in a list-type format under selected headings of floor work, apparatus work and teacher suggestions. The Alberta Curriculum Guide, Elementary Physical Education, 1969, provided the model for the outlining of materials in this form as this curriculum's unique component.

The third design chosen was to provide teachers with a curriculum designed with the least amount of specificity and detail of the three curricular designs used. Choice of implementation strategies for teachers using this design was determined by the teachers' use of the general components which were basic information common to all three curricula. The unique components found in the previous two curricula were missing in this curriculum.

Curriculum Implementation

The second area of review concerned curriculum implementation and factors affecting teacher implementation of curriculum. One factor is teacher adoption of curriculum (Selected). Selected characteristics of curriculum influence teacher adoption or rejection of an innovation or curriculum for implementation. In one study of prepared curriculum and teacher practice, certain characteristics of curriculum were found to be influential (Rogers and Shoemaker, 1971, p. 23)

1. Its relative advantage (to the teacher)
2. Its complexity

3. Its compatibility with existing value system
4. Its divisibility
5. Its communicability

Their study indicated that the adoption of a curriculum by teachers was affected by its characteristics or " . . . by the attributes of the innovation" (pp. 22-23). Crowther's thesis (1972) attempted to identify factors which facilitate or impede adoption and implementation of curriculum. He suggested that some innovations fail to be adopted and referred to Rogers and Shoemaker's five characteristics as sources for explanation of this. Sikorski (1976) suggested that resistance to curriculum can be minimized and acceptance enhanced when the curriculum or innovation is perceived as important by teachers.

The organizational climate for change in schools was found to be influential with regard to teacher curriculum implementation. This was true, particularly with regard to teacher readiness to adopt innovations (Berman, et al., 1975; McGeowan, 1979). Studies conducted by the Rand Corporation (Berman et al., 1975) found that elements which influenced innovation in schools included: a problem-solving capacity, openness to discussion, procedures and relationships which enable a school to learn from its successes and failures, and staff involvement in innovation, decision making and leadership. McGeowan (1979) has stated, regarding such elements: "There exists (it is postulated), certain identifiable structural and procedural attributes of schools which are likely to facilitate or inhibit curriculum change" (p. 251).

Another aspect reviewed concerned curricular implementation and supervisory assistance received by teachers in implementing externally-prepared curricula. Bjork (1970) found that teachers who received direction and supervisory assistance during implementation perceived themselves to have implemented curricula to a greater degree than those not assisted. Studies have indicated that the type and amount of supervisory assistance given to a practising teacher can have a positive influence on curriculum implementation (Sikorski, 1976).

In the context of curriculum implementation by teachers, Connelly (1974) stated: " . . . there is plenty of evidence to show that teachers modify, radically modify, the content, roles and aims of curriculum, whether or not it is centralized" (p. 10). The indications are that teachers are involved in curriculum planning whether or not this curriculum is centrally prepared. Their actual role in planning can vary, however. Connelly (1974) suggested that teachers are thought of either as sole developers, as field testers (or critical filters of externally prepared curricula) or as "on-the-spot interpreters" of program materials. Teachers make " . . . decisions on the spot in instructional settings to modify goals, programs and content" (Connelly, 1974, p. 11). Where the teacher is a "field-tester" serving the developer's purpose by implementing externally prepared curricula, the function of the curriculum developer (Connelly, 1974) is " . . . to elaborate theoretical conceptions of society, of knowledge, of subject matter, of teachers and learners, and to translate those conceptions into coherent curriculum materials" (p. 14). The teacher's role is " . . . to choose from the field of curriculum materials those that are best suited for his interests, (choice being) guided by the theoretical and practical considerations. . . ." (Connelly, 1974, p. 15), and accordingly, the most useful materials are "those materials which minimize the clerical description, stay away from prescriptions, and maximize theoretical and empirical descriptions of the material and its various uses" (p. 15).

The teacher's role in curriculum development can involve more than support of developer intentions. Teachers can modify developers' intentions, and serve as arbitrators between the demands of the curriculum materials and the instructional setting. Connelly has suggested that if teachers modify curriculum developer intentions, then they should be taught well to do so. This presupposes the development of models of analysis that could be applied to externally prepared curriculum materials. Models would help determine what range of potential exists in available curriculum materials. If teachers become successful arbitrators or implementors of curricula, perhaps externally prepared curriculum materials should continue to be made available. Increased attention should then be given to teacher translation or implementation of these materials.

Teacher involvement in curricula planning and the implementation process has resulted in a variety of categorizations regarding the preactive and interactive phases of teaching. Kane (1976) has outlined four categories affecting teacher implementation:

1. Objectives
2. The teacher context
3. Evaluation
4. The teacher (p. 76)

A curriculum planning model called the 'objectives-first model" has been described by McCutcheon (1980). This teacher involvement process associated with implementation involves:

1. Formulating objectives

2. Choosing appropriate learning activities
3. Organizing those activities into a sensible order
4. Selecting evaluation procedures

This "means to ends" perspective has not gone unchallenged. Kane (1976) has stated that: " . . . curricula are not in fact planned in this way and that the teachers do not prespecify their ends according to any very organized or precise system" (p. 76). Studies by Zahorik (1975) have indicated that teachers' initial planning decisions are around students and activities. Taylor (1970) has supported this, indicating that it seems unlikely that teachers set down their ends or short-term objectives, then work backwards to the planning of appropriate learning experiences.

Studies of teacher reactions to systematic curriculum implementation have revealed some decisions and patterns of behavior of teachers in planning. Tom (1973), in his study of implementation of externally prepared curricula, found consistent patterns of behavior. Curriculum decisions were found to be largely based on pragmatic criteria, such as children's enjoyment of the content presented to them. As well, teachers showed tendencies to prefer concrete activity as opposed to abstract thinking. Teachers reacted to demonstrations of teaching using new curriculum by focusing on the actual teaching strategies used. They engaged less in abstract analysis of curriculum issues and analysis of the goals of the curriculum until they had used the materials with students and were then able to identify the pedagogical problems in the materials (p. 88). This suggests that teacher planning and use of curriculum probably changes during implementation.

Taylor (1970) suggested that a difference exists between planned and "actual" curriculum. He distinguished between the "intended curriculum" and the "operational curriculum". The former describes the plan or guide which the teacher pursues; the latter describes what is actually taught. Tom (1973) suggested that, because of the variance of actual teacher behavior from the behavior assumed in rationale or systematic curriculum planning models, a reconceptualization of curriculum planning needs should be undertaken. This would include such issues as teacher selection of material they estimate to be appropriate for students, and ways in which teachers analyze curricula and plan teaching. The latter means restructuring the curriculum analytical process to allow teachers " . . . their initial pragmatic and concrete responses to a new curriculum. . . ." (p. 91). Kane (1976) supported this by stating:

> Clearly some form of rational planning must be undertaken since without some idea of his intended direction, a teacher must necessarily be at a loss concerning the choice of curriculum content and teaching approach (p. 77).

Implementation of curriculum involves at least two aspects; choice of content and teaching approach. It may be that through the study of the implementation process, insight into teacher decision making can be best achieved.

Implementation, as defined by Fullan and Pomfret (1977), " . . . refers to the actual use of an innovation or what an innovation consists of in practice" (p. 336). This differs from the decision to use and from the planned use, the former being defined as adoption. They suggested that there are at least five dimensions associated with implementation. These include:

1. Changes in structure
2. Role behavior

3. Knowledge
4. Understanding
5. Value internalization (p. 361)

They proposed that implementation is concerned with what happens to an innovation between the time it was designed and the time the consequences of its use are seen. They have suggested that problematic aspects of bringing about change involve more than development of curriculum materials. Change is seen to be influenced by the setting and the relationships of people in the setting in which the change is to occur. Fullan and Pomfret (1977) have called this ' . . . changes in roles and role relationships of these organizational members most directly involved in putting the innovation into practice" (p. 337). These changes are often " . . . left implicit in the (curriculum) design" (p. 346).

Gross, Giacquinta and Bernstein (1971) have suggested that successful implementation requires an adaptation by teachers to meet the requirements of the curriculum. They have stated that the degree of implementation is:

> . . . the extent to which organizational members have changed their behavior so that it is congruent with the behavior patterns required by the innovation. One indication of implementation is that some components of an innovation are more difficult to implement than others (p. 16).

Hall and Loucks (1977) have conceptualized the "fidelity" orientation, the planned use of curriculum as compared to its actual use. They postulated that individual teachers reflect levels of use or degree of implementation of a curriculum over time. They formulated the following levels:

1. non-use
2. orientation (initial information)

3. preparation (to use)
4. mechanical use
5. routine
6. refinement
7. integration
8. renewal (p. 262)

Fullan and Pomfret (1977) stated that: " . . . it may be that the fidelity perspective, with consequent specific instruments, is most applicable when studying the implementation of prepackaged, relatively explicit innovations" (p. 367). They have organized into four categories the various factors or determinants of implementation:

A. Characteristics of the Innovation
    1. Explicitness (what, who, when, how)
    2. Complexity

B. Strategies
    1. In-service training
    2. Resource support (time and materials)
    3. Feedback mechanisms
    4. Participation

C. Characteristics of the Adopting Unit
    1. Adoption process
    2. Organizational climate
    3. Environmental support
    4. Demographic factors

D. Characteristics of Macro-Sociopolitical Units
    1. Design questions
    2. Incentive systems
    3. Evaluation
    4. Political complexity (Fullan and Pomfret, 1977, pp. 367-368).

Application to the Study

Each curricular design was intended to facilitate teacher initial adoption and subsequent implementation of the curriculum. The researcher designed each format in the light of those characteristics of curriculum which have been found to influence adoption and implementation. These included complexity, communicability and compatibility with existing teaching systems (Rogers and Shoemaker, 1971).

The opportunity to use a curriculum compatible with an accepted movement education system of teaching gymnastics no doubt influenced teachers' initial adoption of the curriculum. The validation of each design of curriculum by supervisory personnel who were known to the sample teachers could have facilitated adoption.

Teachers were asked to interpret and implement their particular curricula, and attempt to modify developer intentions only to suit individual teaching needs and to facilitate the enjoyment of the children. Where the 'operational' curriculum differed from the 'planned' curriculum, teachers were asked to comment. Individual adaptations and the reason for their choice was given in interview to the researcher. The interviews would attempt to ascertain levels of use and adaptations of each curriculum used over the relatively brief implementation period.

Thompson (1979) found that teachers preferred to use detailed and progressive lesson plans to help them develop units. Teachers in Thompson's study indicated that they preferred, as well, that curricula be designed to allow flexibility in selecting components which would meet their own needs.

This study was an extension of Thompson's (1979). Teachers were asked in the first format to implement curricula designed at varying levels of specificity. The lesson plan format was used in Thompson's study (1979) and indicated that teachers preferred to use this design of curriculum. A less specific design was chosen for the second format in the present study as indications are that teachers desire some flexibility in choosing components for developing a unit. The variety of curricula designs being provided in many of Alberta's school divisions points to the need to explore the implementation of less specific designs of curriculum. Finally, a relatively non-specific design was chosen for the third format to give teachers a high degree of flexibility regarding choice of implementation strategies.

Elementary School Gymnastics

The Structure of Gymnastics Content

The Alberta Interim Curriculum Guide for Elementary Physical Education (1981) has suggested that "Through movement-centered experiences, physical education provides a basis on which the individual's development can be maximized in the psychomotor, cognitive and affective domains" (Department of Education, 1981, p. 5). The original Alberta Curriculum Guide, Elementary Physical Education (1969) has recommended that "Emphasis is placed upon the development of movement concepts and understandings and the applications of these to a variety of practical situations" (Department of Education, 1969, p. 2). Gymnastics is one of seven dimensions which presently constitute physical education in Alberta.

Through gymnastics, practical experience in movement is provided and " . . . systematic and progressive experiences of movement can be built up" (Morison, 1969, p. 3). Morison (1969) has stated that, " . . . the functional, objective action side of movement can best be served by educational gymnastics" (p. 3). Williams (1979) has stated, "Educational gymnastics is an activity in which the attention of the performer is focused immediately and completely on the movement of his own body" (p. 6). The fundamentals of functional movement are experienced, developed and understood as children are taught to move in meaningful ways. Meaningful experiences are provided by drawing upon the child's natural desire to come to terms with his physical environment" (Mauldon and Layson, 1965, p. xii). Morison (1969) has suggested that functional movements, " . . . have an external focus and deal with objects to be handled or practical tasks to be done" (p. 5). From this, skill is acquired " . . . as a means by which children can experience and understand movement in a variety of practical situations" (Mauldon and Layson, 1965, p. xi).

The platform for decisions in designing much of the contemporary curricula in gymnastics has been movement education. The curricula used in gymnastics indicate that four main movement principles provide the framework for the nature and content of gymnastic material (Kruger and Kruger, 1977; Logsdon, et al., 1977; Morison, 1969). Stanley (1977) has arranged gymnastics material under the headings of these four principles of movement: body, space, effort quality and relationships. The elaboration and application of this framework provides the content of gymnastics. Logsdon et al. (1977) have suggested that identifying the requirements of the movement associated with gymnastics means identifying its content. Once we know the content, the task of the teachers is to order the content in a logical progression. Themes and their use enable teachers to accomplish this.

A gymnastics theme " . . . is a particular aspect of movement chosen by the teacher as the focal point round which he can build a series of lessons" (Williams, 1979, p. 18). The use of gymnastics themes has become established by authors in gymnastics as the accepted method of structuring gymnastics content. This is done to help ensure the progressive, hierarchical nature of challenges (Kruger and Kruger, 1977; Mauldon and Layson, 1979; Williams, 1970). "Themes enable teachers to build their work systematically and give them a way of making consistent progress" (Morison, 1969, p. 174). General guidelines are provided in the literature to assist teachers in their selection and presentation of themes. Observations of children provide insight into present levels of skill, maturity and ability to understand selected movement concepts (Morison, 1969; Mauldon and Layson, 1979). This provides information for teachers to teach initial and subsequent themes.

Gymnastics themes are classified, as Williams (1979) has stated, " . . . according to their direction of focus" (p. 19). Although classification schemes differ among authors, the intent is common. This is to arrange themes to assist teachers in a logical presentation of theme material to meet the observed needs of children, and to aid teachers in understanding the content of gymnastics (Mauldon and Layson, 1970; Williams, 1979).

Themes have also been classified hierarchically by selected authors. This suggests an approximate order of progression for teaching the themes (Kruger and Kruger, 1977; Mauldon and Layson, 1979; Morison, 1969; Williams, 1979). Introductory themes place an emphasis on what the body is doing and on uses of specific body parts in action (Mauldon and Layson, 1979). Themes for introductory work include locomotion, stillness, weight bearing, weight transference and body shapes (Mauldon and Layson, 1979; Morison, 1969). Intermediate themes place an emphasis on " . . . refining and clarifying the action and introducing more challenging and dangerous work (Williams, 1979, p. 24). Themes for intermediate work include flight, balance and overbalance, twisting and turning, levels and directions (Kruger and Kruger, 1977; Mauldon and Layson, 1979, Morison, 1969). Advanced themes place an emphasis on " . . . widening the movement experience. . . ." (Mauldon and Layson, 1979). Williams (1979) has stated that advanced themes " . . . further refine bodily movement and make heavy physical and aesthetic demands" (p. 24). Advanced work emphasizes the spatial and dynamic aspects of movement while " . . . relating and integrating aspects of movement previously worked on at elementary and intermediate levels" (Mauldon and Layson, 1979, p. 208).

The classification of themes, according to their focus and into a hierarchical structure is intended to provide the teacher with a framework for teaching. This is so that gymnastics experiences can be developed progressively. Morison (1969) has suggested that themes are intended to be absorbed into each other. Logsdon et al. (1977) have stated:

> The extent to which the learner can gain from learning experiences built from this movement content depends to a measurable degree on the teacher's capacity to understand, interpret and implement the movement content (p. 99).

Not only must teachers understand the nature and content of each theme (Logsdon, et al., 1977), they must understand how and when to incorporate work from other themes. "Every relevant aspect (of movement) is used in developing the main theme in order to give wide, all round experience and understanding of what is involved in the theme" (Morison, 1969, p. 141). The focus of a theme stresses one aspect of movement (Morison, 1969; Williams, 1979). Other movement ideas drawn from other themes enrich this theme. A body awareness theme such as balance can be supported by action themes (locomotion into balances), spatial themes (levels and balances) and dynamic themes (strong and light actions associated with balancing).

A balance theme might be used for children who are good movers, but who need greater body control. Williams (1979) stated, "Balance is experienced using different body surfaces and parts and load-bearing bases" (p. 43).

Implicit in balance work is an emphasis on bodily tension and use of limbs to assist in balancing. Because of this, themes like travelling and stopping, weight bearing, transference of weight and shapes are necessary prerequisites. They will help develop use of body limbs and promote an experience of controlling one's body. Arriving into and leaving balance are aspects which are included in balance work. Development of these techniques leads to development of skill in using balance effectively.

A variety of curricular resources has been produced intended to help teachers reach this goal. Units of materials are being developed in Alberta's school systems (Calgary Public School System, P.E.E.R., 1976; Calgary Separate School Board, Calgary Separate P.E.P., 1978; Red Deer Public School District, P.E.P., 1978). The arrangement of gymnastics content differs among systems. The Calgary Public School System has arranged selected gymnastics content in themes according to movement principles that reflect the functional human movement common to gymnastics. Red Deer Public School District has arranged essentially the same gymnastics content but with a greater emphasis on the detailing and prescribing of the content into lesson plans. Calgary Separate School System has provided gymnastics content around selected concepts such as maneouvering weight and spatial awareness.

Textbooks have outlined theme material and teaching suggestions (Mauldon and Layson, 1979; Stanley, 1977; Williams, 1979). Williams (1979) has arranged material under the headings of themes which are intended to be " . . . a series of ideas for starting-points in the development of (teachers') own materials for teaching" (p. 2). Mauldon and Layson (1979) provided material in which " . . . each theme is (divided) into material, teaching and apparatus" (p. 5).

Application to the Study

The choices of elementary school gymnastics and the theme of balance were guided by theoretical considerations outlined above. Gymnastics in the elementary school provides practical and functional movement experiences in a progressive and systematic way. This is accomplished in one way, by use of themes. The choice of the theme of balance was considered appropriate for children at a Grade Four level. The organization of the theme material however, into curriculum for teacher use, required the examination of the variety of types of gymnastics curricula available. The choice of format or design for each curriculum on balance was influenced by this examination.

With the availability of a variety of types of curricular materials for teacher use in gymnastics, there are questions which need to be answered. Which types of gymnastics curricula will best assist teachers in planning and implementing gymnastics programs? What format or design should selected gymnastics curricula assume? How are teachers' attitudes towards, and knowledge in gymnastics and selected themes affected by the designs of curricula used?

Theory and Methods of Measuring Attitudes

The second general issue of this chapter concerned the theory and methods regarding the measurement of attitudes.

An attitude is defined by Thurston and Chave (1956) as " . . . the intensity of positive or negative effect for or against a psychological object" (p. 39). They have suggested that a psychological object is any symbol, person, phrase, slogan or idea toward which people can differ as regards positive or negative effect. Stanley and Glock (1969) have provided a definition which expands on the above definition. They stated, "The concept of attitude refers to the way individuals act and think toward and about people, objects and situations they encounter as a result of previous experience" (p. 455). Thurston and Chave (1956) concentrate on one effect or dimension, that is, evaluativeness. They fit into the category that attitudes are "feelings towards".

Others support a multidimensional view and suggest that attitudes are composed of affective, cognitive and behavioural components. These correspond to one's evaluation of, knowledge of, and predisposition to act toward the object of the evaluation. This multi-dimensional view of attitudes is supported by Katz and Stotland (1959) and Krech (1962) who have suggested that attitudes consist of three components - cognitive, emotional and action tendency. Thurston and Chave (1956) suggested that a person may not, in fact, act in accordance with the attitude he has indicated. They stated, "The measurement of attitudes expressed by a man's opinions does not necessarily mean the prediction of what he will do" (Thurston and Chave, 1956, p. 7). There are differences, it appears, in investigator's concepts of attitudes, which would affect each investigator's method of measuring attitudes. As well, in measurements of attitudes, one can only assume truthfulness and consistency in replies. Summers (1970) stated that:

> Despite the wide variety of interpretations, there are areas of substantial agreement: 1. attitudes are predispositions to respond to an object rather than the actual behaviour, 2. attitudes are persistent over time, 3. attitudes produce consistency in behaviour, 4. attitudes have a directional quality (p. 2).

Issues of relevance to attitude measurement include content and construct validity. Validity indicates " . . . the degree to which an instrument measures the construct which is under investigation" (Bohrnstedt, 1970). Two types of validity are listed in *Standards for Educational and Psychological Tests and Manuals* (The American Psychological Association, 1966). Content validity refers to the degree that the score or scale represents the concept about which generalizations are to be made. Construct validity is evaluation by investigating what qualities a test measures, by assessing the degree which explanations or constructs account for performance on the test.

Application to the Study

A Likert-type scale is one commonly used method to gather information regarding attitudes. These are generally presented as a series of statements describing potential answers to the stimuli. The respondent indicates degree of agreement or disagreement to each statement on five-point scales. The researcher chose a Likert-type scale for gathering information regarding attitudes. A validation of the questionnaires used was implemented.

Theory and Methods of Measuring Knowledge

The third general issue of this chapter concerned the theory and methods of assessment regarding knowledge. Knowledge, as defined by Webster (1976), is " . . . awareness of facts, truth or principles, cognizance. . . ." (p. 260). H.H. Price (1965) has stated, "In knowledge, the mind is directly confronted with certain facts or with a certain particular" (p. 76). Powell (1967) has suggested for knowledge claims that there must be a body of knowledge with structured concepts, methods of application and tests of veracity. A distinction between two types of knowledge - 'knowing how' and 'knowing that' has often been postulated.

Controversy exists on whether that notion of knowing how depends upon a prior act of knowing that (Ryle, 1949; Scheffler, 1965). Review of these types of knowledge has raised three specific issues which have been reviewed in this section of this chapter: particular types of knowledge, knowledge and action, and individuals' responses reflecting knowledge and methods of gathering knowledge information.

The first issue reviewed concerned particular types of knowledge. Ryle (1949) has suggested that there are two different kinds of knowledge - propositional and procedural. He sees knowledge as a disposition to behave or act in certain ways in particular circumstances. There exists a distinction and priority of propositional knowledge (know-that) and procedural knowledge (know-how). Ryle (1949) postulates that the discovery of an action that is successful in achieving its purpose may precede an analysis of the action. Powell (1967) has suggested that it is not possible to divorce knowing-how from knowing-that, and in fact, knowing-that is prior to knowing-how. She has stated,

> We can hardly hold that whether or not someone has learned a number of truths is of little importance in settling whether or not he possesses a skill. The difference between knowledge of certain truths and having an ability to do certain things is not so great as we are invited to believe (Powell, 1967, p. 10).

The notion that knowledge is explained as a disposition, and that there is a distinction between dispositions to 'know-how' and 'know-that', raises questions regarding recognition of knowledge.

Aspin (1977) states:

> Moreover, man's knowledge - whether of fact or procedure - may in case not necessarily be manifested at all; either the knower might have good reasons for concealing his knowledge, or he may simply know it on a single occasion, after which its expression or demonstration may never again be relevant or called for (p. 27).

Knowledge of propositions depends upon and involves the skill of justifying the knowledge claims (Aspin, 1977). Rynin (1967) stated, " . . . both the affirmation and denial of knowledge claims presupposes a subject matter concerning which the claims are made" (p. 15). It may be suggested that examination of one's 'know-how' may not necessarily reveal one's 'know-that'.

A second issue reviewed concerned knowledge and action. Ryle (1949) has suggested that successful practice precedes definition and explanation of procedural elaborations for it. He has distinguished practice-acquired behaviour into habits and intelligent capacities. Scheffler (1965) suggested there exists a distinction between habits, involving 'closed' skills in which there are limits to the development of competence (e.g. walking or spelling) and 'open' skills which call for constant application of observation, attention, judgment, modification and correction (skiing and teaching). Scheffler (1965) has stated that, " . . . knowing-that depends solely on having true belief, but, in the strong sense, it requires something further - for example the ability to back up the belief in a relevant manner" (p. 9). Do behaviours or patterns of action presuppose a person has acquired the relevant knowledge? Sheffler (1965) suggested that a person can acquire a new trait or pattern of behaviour that is not necessarily based on terms of knowledge, but rather in terms of active propensities, tendencies or habits of conduct" (Sheffler, 1965, p. 17). Knowing-how, he has suggested, represents the possession of a skill, a trained capacity, a competency or a technique. Reeducation of knowing-that to knowing-how has led some to conclude that knowing-how is logically prior to knowing-that (Ryle, 1949).

The third area of review concerned individual responses reflecting knowledge. Reduction of knowing-that to knowing-how, has been carried specifically to what Aspin (1977) has suggested is knowing how to reply appropriately to questions. For this follows that 'know' is a dispositional term and an allowable attribution of knowledge of a propositional kind rests upon the ability of the respondent to reply correctly, or give an "intelligent performance" (Aspin, 1977).

Application to the Study

To perform successfully seems to presuppose that the respondent knows what the structure, concepts and methods of application of a subject are. Aspin (1977) has noted that skill and its propositions are " . . . peculiar in character to that kind and are highly context-bound and field-dependent" (p. 10). A number of procedures are used to assess knowledge in particular contexts. These include examinations in various formats. Criteria-referenced examinations provide objective measures. Subjective measures include scales in which respondents indicate their beliefs about a topic. The researcher chose a subjective-type self-assessment measure to gather information regarding knowledge of the theme of balance.

Theory and Methods of Gathering Interview Information

The Shorter Oxford English Dictionary (1947) defines an interview as "A meeting of persons face to face, especially for the purpose of formal conference on some point" (p. 1033). Anderson et al., (1976) suggested that it may be thought of as an oral questionnaire. They distinguished between structured and unstructured interviews. They stated, "The structured interview has its content and procedures standardized in advance. . . . The unstructured interview is rather like a free-response of open-ended questionnaire" (Anderson et al., 1976, p. 214).

There are continuing arguments over the relative merits of interviews in research. Anderson et al., (1976) have indicated that some concerns include: the training of interviewers, the effect of the personality of the interviewer on the interview, and the standardization of procedures of questioning and recording throughout all interviews. Barber (1973) suggested that interviewers often have difficulty in following experimental "protocol" closely even when the "protocol" is standardized. He suggested that difficulties often arise in research when interviews vary in the way they greet their subjects, the way they read instructions, and the way they implement the specific procedures. Interviews have been found to deviate from protocol by, " . . . skipping questions that were to be asked and holding discussions with the subject that were not part of the script" (Barber, 1973, p. 390).

Relatively few studies have been conducted on the topic of the interview. Areas of concerns regarding interviews remain unexamined. Barber (1973) has suggested a few. These include: the effect of an interviewer giving positive feedback, the effect of males interviewing females and vice-versa, failure to record subject responses correctly, and the effect of interview bias on the tendency of the interviewer to follow protocol closely if results are in harmony with the interviewer's hypothesis. Anderson et al., (1976) have stated:

> (The) interviewer bias can be minimized by careful interview construction, by training procedures which make the interviewers aware of the possible problems and sometimes by matching interviewer characteristics to characteristics of the sample being interviewed. Of course, the less the interview bias, the greater the validity of the data (p. 51).

Application to the Study

The researcher sought to probe further into teachers' use of selected curricula. Information gathered from interviews provides insights about teacher reactions to curricula not easily obtained from a questionnaire. An interview allows a personal contact with the opportunity for interviewer-probing of reactions, attitudes and knowledge.

Summary

This chapter presented a review of literature relating to the five issues upon which the research was based. The first issue concerned relevant curriculum development theory. The second issue concerned elementary school gymnastics and the design of gymnastics curricula. The third and fourth issues concerned theory regarding attitudes and knowledge with a review of methods of assessment in each. The fifth issue concerned the theory regarding interviews.

The following chapter provides the application of the theoretical background to the design and impelmentation of the study.

Chapter 3

THE DESIGN OF THE STUDY

Introduction

The first part of this chapter outlines the development of three formats of curricula designed for teaching the theme of balance. The second part of this chapter describes the sample of teachers involved with the curriculum and their implementation of the curriculum. The third and fourth parts of this chapter describe the development of the attitude and perceived knowledge questionnaires used as data collection instruments. The final part of this chapter explains the two interview schedules used as data collection instruments.

Development of Curricula

This study required the development of selected gymnastics curricula designed for teachers of Grade Four. The Alberta Curriculum Guide, Elementary School Physical Education (1969), provides gymnastics content arranged for divisions of grade levels. The researcher attempted to be consistent with this classification, and designed the selected curricula for Grade Four. The researcher chose teachers at the Grade Four level for implementation of the curricula because of the appropriateness of balance work at the Grade Four level. The theme of balance was based on the general guidelines presented by selected authors regarding its appropriateness for Division Two or Grades Four, Five or Six children (Kruger and Kruger, 1977; Mauldon and Layson, 1979; Williams, 1970).

Curricula commonly used in elementary school gymnastics were researched to determine the designs of curricula most commonly used. Three types of design were prevalent: curricula were designed in lesson plan format (Red Deer Public School District, P.E.P., 1978; Williams, 1979), curricula were designed in outline format with curricular material listed as in the Alberta Curriculum Guide, Elementary Physical Education, 1969, and curricula were designed with teacher and learner suggestions implicit within statements describing theme material, goals and objectives (Morison, 1969). All curricula for gymnastics were generally found to be organized into components of information on content material, teaching suggestions and learner suggestions. The design of these components of information and the order in which they appeared in curricula, varied.

From the research on available curricula, three formats for design of curricula to be used in this study were selected. The design decisions were influenced by the following theoretical considerations.

First, teacher planning models suggested by various individuals (Beauchamp, 1975; Taba, 1962) indicated that teachers plan in areas involving objectives, learning activities, organization of learning activities and evaluation. Zahorik (1975) suggested eight areas in which teacher decision-making occurs: objectives, content, activities, materials, diagnosis, evaluation, instruction and organization.

Second, curricular planning and implementation models suggested by various individuals (Hall and Loucks, 1977; Leithwood, 1981) indicated that curricula are designed by components and can be viewed in the light of their components. Leithwood (1981) has stated that a set of components " . . . may be taken (for heuristic purposes) as a definition of the major parameters of a complete curriculum" (p. 26). Leithwood (1981) identified nine curriculum components: " . . . platform objectives, student entry behaviours, assessment tools and procedures, instructional materials, learner experiences, teaching strategies, content and time. . . ." (p. 27).

Third, the curriculum development process outlined by various individuals (Schaffarzick, 1975; Taba, 1962) meant consideration for theoretical foundations of curriculum development. Schaffarzick (1975) suggested that format of curricula is influenced by theoretical foundations which incorporate " . . . views about learning, characteristics of learners, about the subject matter to be taught . . . or about any other topics that bear on the work to be done" (p. 216).

In preparing the three different curricula on the theme of balance, the researcher selected components which reflected the views noted above. Sixteen components were developed and included in the three curricula. Fifteen components remained constant for each curricula (Appendix A - Curriculum Components Common to the Three Curricula). Components were necessary for teaching the gymnastics theme and their inclusion was deemed necessary in each curriculum. These were:

Curriculum A	Curriculum B	Curriculum C
FOREWARD	FOREWARD	FOREWARD
A. The Concept of Balance	A. The Concept of Balance	A. The Concept of Balance
B. The Purpose and Place of Balance	B. The Purpose and Place of Balance	B. The Purpose and Place of Balance
C. The Components in Balance	C. The Components in Balance	C. The Components in Balance
D. The Development of Tasks in Teaching Balance	D. The Development of Tasks in Teaching Balance	D. The Development of Tasks in Teaching Balance

Curriculum A	Curriculum B	Curriculum C
E. Apparatus Work and Balance	E. Apparatus Work and Balance	E. Apparatus Work and Balance
F. Partner Work and Balance	F. Partner Work and Balance	F. Partner Work and Balance
G. The Child and Balance	G. The Child and Balance	G. The Child and Balance
H. Summary	H. Summary	H. Summary
INTRODUCTION		
A. Goals	A. Goals	A. Goals
B. Instructional Objectives	B. Instructional Objectives	B. Instructional Objectives
C. Development of the Theme Material	C. Development of the Theme Material	C. Development of the Theme Material
THE UNIT	THE UNIT	THE UNIT
THE LESSON PLANS	THEME MATERIAL	SAMPLE LESSON PLAN
Evaluation	Evaluation	Evaluation
Definitions	Definitions	Definitions
Bibliography	Bibliography	Bibliography

In the unit component, the choice and organization of content varied among the three curricula. In Curriculum A (Appendix B - Unique Component of Curriculum A), eight lesson plans were contained in the unit. In Curriculum B (Appendix C - Unique Component of Curriculum B), an outline of content, teaching strategies and learner experiences were contained in the unit and listed under major headings. These were called Floorwork, Apparatus Work and Teaching Suggestions. In Curriculum C (Appendix D - Unique Component of Curriculum C), the unit contained no theme material. In its place, one sample lesson plan was included and was intended to be used as a guide in developing lessons using information presented in the fourteen common components.

The next concern of the researcher was validation of the curricula.

Two validation procedures were used simultaneously and involved different validators and procedures. One validation procedure for each curriculum was designed to assess the clarity of language used, the organization of content in each component and the overall structure of each curriculum (Appendix E - Outline of Explanation and Questions for Construct Validation of Curricula). The validators were Grade Four teachers, non-specialists in elementary school physical education. They were chosen because the sample used in the study was one of Grade Four teachers who were non-specialists in elementary school physical education (Appendix F - Validators).

A second validation procedure was designed to assess whether the theme of balance had been developed comprehensively and sequentially within the framework of each curriculum. The validation procedure sought information regarding the amount of information provided in the foreward and introduction components, the clarity of language used in these components, the amount of theme material provided, the phrasing of the instructional objectives, the amount, clarity and applicability of content in the component called The Unit, the clarity of the evaluation scheme, and the clarity of the teaching suggestions (Appendix G - Outline of Explanation and Questions for Content Validation of Curricula). Specialists in the field of elementary school physical education were selected for the validation of content. These specialists were chosen because of their training, expeience and knowledge in the field of elementary school gymnastics and because of their present roles in either supervision of physical education programs or university teaching positions (Appendix F - Validators).

Development of the Attitude Questionnaire

The variables being tested dealt with teachers' attitudes towards

Division Two gymnastics and to the theme of balance. Five categories regarding attitudes were developed to represent the variables being tested. Twenty-three components were selected to elaborate upon the five categories. From the twenty-three components, ninety-three items were developed as possible questions to be included on the final questionnaire. Twenty-nine questions appeared on the final questionnaire.

A five-stage validation procedure was designed to assess the content and construction of the categories, components and final questionnaire. This procedure allowed the researcher opportunity to probe into the responses from the validators at each stage. Validators selected were considered knowledgeable about elementary school gymnastics because of present or past teaching involvement in this area (Appendix F - Validators). Each stage of the validation procedure involved written feedback which the researcher used for development of the next stage. The five stage validation procedure is outlined below.

Validation Procedure - Stage 1

Five categories were developed which represented the variables being tested i.e. teacher attitude to gymnastics and to the theme of balance. The validators indicated their degree of agreement whether the categories elaborated on the variable. They responded on a five-point Likert-type scale for each category: 1 - strongly agree, 2 - agree, 3 - undecided, 4 - disagree, 5 - strongly disagree. This type of scale was chosen for its high degree of validity and reliability, and for its ease of marking. The responses were assigned a weighting: strongly agree +2, agree +1, undecided 0, disagree -1, strongly disagree -2.

This permitted the researcher to quantify results and assess whether the majority of the validators favoured a category. A category must have received a total weighting of +4 to be considered for use in developing components at stage two. Each of the five categories were accepted with at least a +4 weighting as presented to them. Minor changes in wording were suggested and completed (Appendix H - Five Categories - Attitudes).

Validation Procedure - Stage 2

Twenty-three components were developed which represented the five categories (Appendix I - Original Twenty-Three Components and Validity Weightings). The validators indicated their degree of agreement whether the components elaborated on the categories. They responded on a five-point Likert-type scale for each component: 1 - strongly agree, 2 - agree, 3 - undecided, 4 - disagree, 5 - strongly disagree. Each validator's response was assigned a weighting: strongly +2, agree +1, undecided -0, disagree -1, strongly disagree -2. This permitted the researcher to quantify results and assess whether the majority of the validators believed the component elaborated on the categories and favoured a component for development of attitude questions. A component must have received a total weighting of +4 or higher in order to be considered for use in developing questions for the final questionnaire. Sixteen components received a weighting of at least +4 and were accepted by the researcher for the questionnaire (Appendix J - Final Sixteen Components).

Validation Procedure - Stage 3

Ninety-five questions were developed which represented sixteen components (Appendix K - Original Ninety-Five Attitude Items). The validators indicated their degree of agreement whether the questions elaborated on the components. The validators responded on a five-point Likert-type scale for each question: 1 - strongly agree, 2 - agree 3 - undecided, 4 - disagree, 5 - strongly disagree. The responses were assigned a weighting: strongly agree +2, agree +1, undecided 0, disagree -1, strongly disagree -2. This permitted the researcher to quantify results and assess whether the majority of validators believed the questions elaborated on the components and favoured questions for development of the final questionnaire. A question must have received a total weighting of +4 or higher in order to be considered for inclusion on the final questionnaire. Twenty-nine questions received at least a +4 weighting and composed the questionnaire.

Validation Procedure - Stage 4

A balanced representation of numbers of questions in components was achieved by including a minimum of one and maximum of three questions in each component. A balanced representation within components of questions was considered necessary to examine later in the study those areas of elementary school gymnastics and the theme of balance which were strong for teachers. Originally, two components included more than three questions. Three questions were selected randomly in each component for inclusion on the final questionnaire. The remaining twenty-nine questions were re-ordered for the final questionnaire. The random listing of questions separated similar questions developed within one component. The Roman numeral of the category and the lettering of the component for each question were included on the questionnaire. This allowed analysis of teacher responses regarding components.

Validation Procedure - Stage 5

The twenty-nine questions were submitted for validation to a panel of four elementary school teachers who were non-specialists in physical education (Appendix F - Validators). This panel included teachers who were similar in training and in their present teaching situation regarding elementary physical education to the sample used in the study. The validation procedure sought information regarding both the construction and content of the scales and the questionnaire (Appendix L - Validation Questionnaire). As a result of this, changes in wording in selected questions and in the diagnostic guide were implemented. The final attitude questionnaire appears in Appendix M.

Development of the Perceived Knowledge Questionnaire

The variable tested was teachers' perceived knowledge regarding the theme of balance in Grade Four gymnastics. Fourteen components were developed which elaborated on the variable being tested. Seventy-five questions were developed to elaborate on the components. From these questions, twenty-four questions were selected and appeared on the final questionnaire.

A four-stage validation procedure was designed to assess the content and construction of the components and final questionnaire. This procedure allowed the researcher the opportunity to probe into the validators' responses at each stage. Each stage involved written feedback which the researcher used for development of the next stage.

Validators selected were considered knowledgeable in the field of elementary school gymnastics (Appendix F - Validators).

Validation Procedure - Stage 1

Fourteen components were developed which represented the variable being tested, i.e. teachers' perceived knowledge regarding the theme of balance. The validators indicated their degree of agreement whether the category elaborated on the variable. The validators responded on a five-point Likert-type scale for each component: 1 - strongly agree, 2 - agree, 3 - undecided, 4 - disagree, 5 - strongly disagree. This type of scale was chosen for its ease in marking and its high degree of reliability and validity. The responses were assigned a weighting: +2 - strongly agree, +1 - agree, 0 - undecided, -1 - disagree, -2 - strongly disagree. This permitted the researcher to quantify the results and assess whether the majority of the validators believed the component elaborated on the category and favoured the components for development of questions for the final questionnaire. A component must have received a total weighting of +4 to be considered for use in developing items for the final questionnaire.

Validators were asked to eliminate redundant components and reword components where required. Two components were eliminated. Questions were developed from the remaining twelve components (Appendix N - List of Twelve Components Regarding Perceived Knowledge of Balance).

Validation Procedure - Stage 2

Seventy-five questions were developed which represented the twelve components. The validators indicated their degree of agreement whether the questions elaborated on the components. The validators responded on a five-point Likert-type scale for each question: 1 - strongly agree, 2 - agree, 3 - undecided, 4 - disagree, 5 - strongly disagree. The responses were assigned a weighting: strongly agree +2, agree +1, undecided 0, disagree -1, strongly disagree -2. This permitted the researcher to quantitatively assess whether a question received the support from the majority of the validators. The validators were asked to eliminate redundant questions and reword questions to increase clarity. Thirty-six questions received at least a +4 weighting and were considered for inclusion on the final scale.

Validation Procedure - Stage 3

A balanced representation of questions in each component was achieved by including two questions in each component. This balance of questions was considered necessary to examine which areas of elementary school gymnastics and the theme of balance were strong for teachers. In components where more than two questions were weighted +4 or higher, a random selection of two items was made. Twenty-four items were considered for inclusion in the final questionnaire (Appendix O - Perceived Knowledge Components and Questionnaire Items).

Validation Procedure - Stage 4

The twenty-four questions were submitted for validation to a panel of four elementary school teachers who were non-specialists in physical education (Appendix F - Teacher Validators). This panel involved teachers who were similar in school situation, training and knowledge regarding elementary school physical education to the sample to be used in the study. A four-point scale was added: 1 - no knowledge, 2 - a little knowledge, 3 - sufficient knowledge, 4 - comprehensive knowledge. The validation procedure sought information regarding the construction and content of the scales and the questionnaire (Appendix M - Validation Questionnaire of Final Attitude and Perceived Knowledge Questionnaire). Changes in wording in selected questions and in the diagnostic guide were implemented.

The final questionnaire appears in Appendix P (Appendix P - Perceived Knowledge Questionnaire).

Posttest In-person Interviews

Nine teachers were randomly selected for in-person interviews. These interviews were designed to probe extensively into teachers' use of the selected curricula. As well, interviews attempted to validate responses from the questionnaires. Regarding interviews, Kerlinger (1973) suggested that responses reflect beliefs, opinions, attitudes and feelings that respondents have about objects with an estimate for their own reasons for doing or believing something.

A fifteen-question interview was designed for teachers, using Curricula A, B and C. Feedback was sought in two areas: teacher reaction to the entire curriculum used and teacher reaction to the components within each curriculum.

Teachers who used Curriculum A responded to an additional three questions regarding their component of lesson plans. Teachers who used Curriculum B responded to an additional four questions regarding the component containing the theme material. Teachers who used Curriculum C responded to an additional three questions regarding the absence of lesson plans and theme material and the usefulness of the components in this curriculum for designing lessons. The interview questionnaires appear in Appendix Q (In-Person Interview Questionnaire).

All interviews were conducted by the researcher and responses tape-recorded. Interviews were arranged by telephone and were conducted at mutually agreed-upon times at the teacher's school or home. The transcripts were summarized by the interviewer and appear in Chapter 4.

Choice of questions for the interviews was based on a question's potential in representing selected areas regarding curricula. Determinants of implementation of curricula suggested explicitness and complexity (Fullan and Pomfret, 1977). Components of curricula and levels of use suggested organizational structure, curricular components, length and breadth (Hall and Loucks, 1977; Leithwood, 1981).

Posttest Telephone Interviews

The remaining twenty-one teachers were interviewed by telephone. Telephone interviews were used because the length of time and size of sample available to the researcher made it necessary to conduct a less in-depth interview in this way. A four-question interview schedule was designed for teachers using Curriculum A, Curriculum B and Curriculum C (see Appendix R - Telephone Interview Questionnaire and Schedule). The initial three questions sought feedback from each teacher in two areas: the teacher's reaction to the curriculum as a whole, and the teacher's reaction to the various components within each curriculum. Teachers who used Curriculum A responded to an additional question regarding the component containing the lesson plans. Teachers who used Curriculum B responded to an additional question regarding the component containing the theme material. Teachers who used Curriculum C responded to an additional question regarding the absence of lesson plans and theme material and the usefulness of the components in this curriculum for designing lessons. The interview schedule appears in Appendix R - Telephone Interview Questionnaire. All interviews were conducted by telephone and responses were written by the researcher. The written reactions were summarized and appear in Chapter Four.

The Sample

The population from which the sample was chosen for the study included Grade Four non-specialist teachers of physical education in the Edmonton Public School System. The sample was delimited to the Edmonton Public School System to limit researcher travel and ensure maximum sample contact. For the purpose of this study, non-specialists were teachers who had completed no more than one elementary school physical education course at the university level and who were teaching their own class in the regular program. The present situation in the schools indicates that classroom teachers will be expected to continue to teach their own physical education. An analysis of the sample of teachers is in Table 1.

The Supervisor of Physical Education for the Edmonton Public School District provided a list of schools employing Grade Four Teachers who met the above-mentioned requirements of the study. Principals of the schools were contacted by telephone and asked if they had a Grade Four teacher on staff who might be interested in taking part in a physical education-related curriculum study. Principals in the thirty-eight schools invited the researcher to talk to those teachers who had expressed interest in being involved in a physical education study.

Table 1

ANALYSIS OF SAMPLE OF TEACHERS

n = 30

Respondents:		
Sex	Male	6
	Female	24
Teaching Experience	1 year	1
	2-5 years	8
	6-10 years	8
	11+ years	13
Physical Education Teaching Experience	1 year	5
	2-5 years	12
	6-10 years	5
	11+ years	8

Thirty schools were selected randomly, and thirty teachers were contacted. The sample was limited to thirty teachers to allow maximum amounts of personal contact and feedback from interviews, to make reasonable pretest and posttesting procedures possible and to have ten teachers use each curriculum design. Procedures to be used for the study were outlined. Suitable dates and times for delivery of the questionnaires and curricula were arranged.

Data Collection Procedures

Three groups of ten teachers were selected randomly to implement Curricula A, B and C. Teachers were asked to implement the gymnastic curricula over four weeks, teaching two gymnastics classes a week. This implementation period was considered necessary for comprehensive implementation of the theme material outlined in each curricula. The implementation time period occurred between October 13th and November 6th, 1981. Teachers were asked to complete questionnaires regarding their attitudes towards gymnastics and perceived knowledge regarding the theme of balance prior to and after using their curricula.

Teachers were contacted in person prior to the implementation period. The attitude and perceived knowledge questionnaires and curricula were left with each teacher. Teachers were asked to complete the questionnaires before reading the curricula. Questionnaires were returned to the researcher in self-addressed stamped envelopes provided by the researcher. Posttest questionnaires were distributed to teachers at the end of the four-week implementation period. Delivery was by the interschool mail system and instructions were given to the teachers by telephone to return the questionnaires in the self-addressed stamped envelope provided. This procedure was used to minimize the difficulties in coordinating in-person distribution of questionnaires.

Interviews lasting approximately forty minutes were scheduled with teachers after completion of the implementation period. Interviews were designed to probe into the implementation of each curriculum. Teachers were contacted approximately one week prior to the completion of the implementation period by telephone to arrange suitable times and places for the interviews.

Details regarding the development of the questionnaires and the interview schedule are outlined in the following chapters.

Summary

This chapter outlined the design of the study. The development of the selected curricula, the choice of sample, and the methods of data collection have been presented. Chapter 4 outlines the analysis of the data.

Chapter 4

ANALYSIS OF THE DATA

Introduction

The purpose of this chapter is to present a detailed analysis of the information gained through responses to the attitude questionnaire, perceived knowledge questionnaire, and to the interviews.

The first part of the chapter provides a description of teachers' responses to the attitude questionnaire and tables outlining the numerical breakdown of responses. The second part of the chapter provides a description of teacher responses to the knowledge questionnaire and tables outlining the numerical breakdown of responses. The validation procedures resulted in elimination of some initial components. As a result, the numbering system is broken throughout this chapter. The third part of the chapter provides a description of responses to the interviews.

The sample of thirty teachers was randomly divided into three groups. Each group implemented a selected curriculum. Curriculum A contained teaching content organized in eight lesson plans in a component. Curriculum B contained teaching content and strategies and learner experiences outlined under major headings in a component. Curriculum C included material common to A and B. The attitude and perceived knowledge questionnaires were administered before and after implementation. Interviews were conducted after implementation.

Twenty-nine attitude questions were grouped under sixteen selected components which were designed to give a comprehensive representation of the variable being tested. The respondent selected one of five responses: 1) strong agree, 2) agree, 3) undecided, 4) disagree and 5) strongly disagree.

The information for each question has been summarized in the following manner:

1) Where it was significant, the paragraph in the Results section discussed the changes from pretest to posttest for each group and discussed the differences among groups in the posttest,
2) A summary of responses for each component which had two or more questions has been included,
3) A numerical breakdown of responses outlined in tables follows each question,
4) A summary of weightings for each question has been included. A weighting system has been used to facilitate a comparison of the changes from pretest to posttest among the three groups for each question. The procedures used were:
   a) The increase or decrease in number of responses from pretest to posttest in the strongly agree (SA, agree (A), undecided (U), disagree (DA), and strongly disagree (SDA) categories have been noted for each group for each question.
   b) The categories (strongly agree, agree, undecided, disagree, strongly disagree) have been assigned a weighting (strongly agree +2, agree +1, undecided 0, disagree -1, strongly disagree -2). The number of increases or decreases for each category has been multiplied by the weightings. This result for each category, and the total for the group (i.e. Users of Curriculum A, B or C) have been recorded below the write-

up of the results for each question in this chapter. Table 31 illustrates a comparison of all groups for all questions and components related to attitudes.

c) Where questions have been worded positively, higher positive totals should be used for comparisons. Where questions have been worded negatively, higher negative totals should be for comparison. Indication is given in Table 31 (+) or (-).

Description of Responses to the Attitude Questionnaire

Component IA - Teacher attitudes toward the teaching of gymnastics as an enjoyable endeavour (Table 2).

Question 8 - I enjoy teaching elementary school gymnastics.

Results - The number of teachers reporting that they enjoy teaching elementary school gymnastics increased in all three groups in the posttest.

However, the teachers using Curriculum B indicated somewhat less enjoyment than the other two groups. In the posttest, the number of teachers indicating strong enjoyment decreased while the number of teachers indicating a lack of enjoyment increased.

	SA	A	U	DA	SDA	Total
Curriculum A	2	1	0	2	0	5
Curriculum B	-4	3	0	-1	-2	-4
Curriculum C	0	3	0	2	0	5

Question 23 - The effort required to teach gymnastics correctly is excessive (Table 3).

Results - In all three groups there was an increase in the number of teachers who believe that the effort required to teach

Table 2

Pretest and Posttest Responses to Question 8

Question 8: I enjoy teaching elementary school gymnastics.

	SA	A	U	DA	SDA
Curriculum A Pretest		4	4	2	
Posttest	1	5	4		
Curriculum B Pretest	3	3	4		
Posttest	1	6	1	1	1
Curriculum C Pretest	1	3	3	2	1
Posttest	1	6	2		1

Table 3

Pretest and Posttest Responses to Question 23

Question 23: The effort required to teach gymnastics correctly is excessive.

	SA	A	U	DA	SDA
Curriculum A					
Pretest		3	3	4	
Posttest		3	1	5	1
Curriculum B					
Pretest			4	6	
Posttest		2		8	
Curriculum C					
Pretest	1	1	3	4	1
Posttest			1	4	5

gymnastics is not excessive. This increase was most evident for users of Curriculum C.

	SA	A	U	DA	SDA	Total
Curriculum A	0	0	0	-1	-2	-3
Curriculum B	0	2	0	-2	0	0
Curriculum C	-2	1	0	0	-8	-11

Question 10 - I have fun with my children in gymnastics classes (Table 4).

Results - In all three groups the number of teachers reporting that they have fun with the children in gymnastics increased in the posttest.

However, the teachers using Curriculum B were a little less enthusiastic than the teachers in the other two groups.

	SA	A	U	DA	SDA	Total
Curriculum A	4	1	0	1	0	6
Curriculum B	-2	2	0	0	0	0
Curriculum C	0	2	0	1	0	3

Summary of Responses to Component 1A

The majority of all teachers who use Curricula A, B and C indicated that they enjoyed teaching elementary school gymnastics in both pretest and posttest. Each group showed increases from pretest to posttest in three questions: those who enjoyed teaching gymnastics, those who did not feel that the effort required to teach gymnastics correctly is excessive, and those who had fun with their children in gymnastics. Users of Curriculum C, followed by users of Curriculum A polled slightly higher increases in these questions.

Component IC - Teacher attitudes toward their own perceived state of competence in teaching gymnastics.

Table 4

Pretest and Posttest Responses to Question 10

Question 10: I have fun with my children in gymnastics.

	SA	A	U	DA	SDA
Curriculum A					
Pretest	1	5	3	1	
Posttest	3	6	1		
Curriculum B					
Pretest	2	4	3	1	
Posttest	1	6	2	1	
Curriculum C					
Pretest	1	6	2	1	
Posttest	1	8	1		

Question 9 - I would feel uncomfortable if a supervisor observed my work in gymnastics (Table 5).

Results - In the groups using Curriculum A and Curriculum B, the number of teachers who reported that they would feel comfortable if a supervisor observed their work increased. The teachers using Curriculum C were unchanged in their willingness to have a supervisor observe their work, as fewer teachers here disagreed with this statement.

	SA	A	U	DA	SDA	Total
Curriculum A	-2	-1	0	-2	-2	-7
Curriculum B	0	-2	0	-2	-2	-6
Curriculum C	2	-1	0	0	0	1

Question 27 - I am personally quite able to improve my own teaching of gymnastics (Table 6).

Results - The number of teachers reporting that they felt able to improve their own teaching of gymnastics increased for the groups using Curriculum A and Curriculum C.

However, the group using Curriculum B was less confident about improving their own teaching. In the posttest the number of teachers indicating that they could improve their own teaching decreased in B.

	SA	A	U	DA	SDA	Total
Curriculum A	2	1	0	1	0	4
Curriculum B	-2	-1	0	1	0	-2
Curriculum C	-2	3	0	1	0	2

Question 28 - I am able to decide what to teach in gymnastics (Table 7).

Results - The number of teachers reporting that they were able to decide what to teach in gymnastics did not increase appreciably in the posttest for any group.

Table 5

Pretest and Posttest Responses to Question 9

Question 9: I would feel uncomfortable if a supervisor observed my work in gymnastics.

	SA	A	U	DA	SDA
Curriculum A Pretest	1	3	3	3	
Posttest		2	2	5	1
Curriculum B Pretest		3	1	6	
Posttest		1		8	1
Curriculum C Pretest		3	2	5	
Posttest	1	2	2	5	

Table 6

Pretest and Posttest Responses to Question 27

Question 27: I am personally quite able to improve my own teaching of gymnastics.

	SA	A	U	DA	SDA
Curriculum A					
Pretest	1	5	2	2	
Posttest	2	6	1	1	
Curriculum B					
Pretest	2	5		3	
Posttest	1	4	3	2	
Curriculum C					
Pretest	1	3	4	2	
Posttest		6	3	1	

Table 7

Pretest and Posttest Responses to Question 28

Question 28: I am able to decide what to teach in gymnastics.

	SA	A	U	DA	SDA
Curriculum A					
Pretest		5	2	3	
Posttest	1	4	3	2	
Curriculum B					
Pretest		5	2	3	
Posttest		5	1	4	
Curriculum C					
Pretest		3	5	2	
Posttest		5	2	3	

	SA	A	U	DA	SDA	Total
Curriculum A	2	-1	0	1	0	2
Curriculum B	0	0	0	-1	0	-1
Curriculum C	0	2	0	-1	0	1

Summary of Responses to Component IC

More teachers who used Curriculum A than Curricula B or C perceived themselves competent, after implementation in aspects of teaching gymnastics, referred to by this component's questions.

Component ID - Teaching attitudes toward the problem-solving approach that has been advocated for teaching gymnastics by selected authors.

Question 15 - I prefer the movement education approach to teaching gymnastics (Table 8).

Results - The number of teachers reporting that they prefer the problem-solving approach to teaching gymnastics increased in groups using Curriculum A and Curriculum B, and decreased in the group using Curriculum C.

However, the group using Curriculum A reported more of an increase in preference towards problem-solving in the posttest than did the other groups.

	SA	A	U	DA	SDA	Total
Curriculum A	2	3	0	1	0	6
Curriculum B	0	2	0	-2	0	0
Curriculum C	0	-1	0	-2	0	-3

Component IG - Teacher attitudes toward constraints and difficulties that are typically associated with teaching gymnastics.

Question 26 - Practical constraints (like shortage of class time, setting up apparatus) are aspects which make teaching gymnastics unpleasant (Table 9).

Table 8

Pretest and Posttest Responses to Question 15

Question 15: I prefer the movement education approach to teaching gymnastics.

	SA	A	U	DA	SDA
Curriculum A					
Pretest		1	8	1	
Posttest	1	4	5		
Curriculum B					
Pretest		3	7		
Posttest		5	3	2	
Curriculum C					
Pretest		1	9		
Posttest			8	2	

Table 9

Pretest and Posttest Responses to Question 26

Question 26: Practical constraints (like shortage of class time, setting up apparatus) are aspects which make teaching gymnastics unpleasant.

	SA	A	U	DA	SDA
Curriculum A					
Pretest	1	7	1	1	
Posttest	3	5	1		1
Curriculum B					
Pretest	1	6	2	1	
Posttest	3	4		3	
Curriculum C					
Pretest	3	5		2	
Posttest		8		2	

Results - In all three groups there was a strong indication that practical constraints are aspects for the teacher which make teaching gymnastics unpleasant. The use of any of the three curricula did not appreciably alter this feeling the teachers had regarding constraints.

	SA	A	U	DA	SDA	Total
Curriculum A	4	-2	0	1	-2	1
Curriculum B	4	-2	0	-2	0	0
Curriculum C	-6	3	0	0	0	-3

Question 4 - The teacher's ability to demonstrate a skill in gymnastics is important (Table 10).

Results - The number of teachers reporting that a teacher's ability to demonstrate is important decreased slightly in the posttest for groups using Curriculum B and Curriculum C. The group using Curriculum A did not show appreciable change in attitudes towards this aspect.

	SA	A	U	DA	SDA	Total
Curriculum A	0	1	0	0	-2	-1
Curriculum B	0	-3	0	-1	2	-2
Curriculum C	2	-3	0	-1	-2	-4

Question 19 - A specialist teacher is required to teach gymnastics correctly (Table 11).

Results - The number of teachers reporting that a specialist teacher is required to teach gymnastics increased slightly for the groups using Curriculum B and Curriculum C. The most noticeable shift in attitudes opposed to specialist teachers was noted by the group using Curriculum A.

	SA	A	U	DA	SDA	Total
Curriculum A	-2	0	0	-3	0	-5
Curriculum B	+2	1	0	-1	2	4
Curriculum C	0	1	0	2	0	3

Table 10

Pretest and Posttest Responses to Question 4

Question 4: The teacher's ability to demonstrate a skill in gymnastics is important.

	SA	A	U	DA	SDA
Curriculum A					
Pretest		3	3	3	1
Posttest		4	1	3	2
Curriculum B					
Pretest		4	2	2	2
Posttest		1	5	3	1
Curriculum C					
Pretest		4	2	4	
Posttest	1	1	2	5	1

Table 11

Pretest and Posttest Responses to Question 19

Question 19: A specialist teacher is required to teach gymnastics correctly.

	SA	A	U	DA	SDA
Curriculum A					
Pretest	1	1	3	4	1
Posttest		1	1	7	1
Curriculum B					
Pretest		1	3	5	1
Posttest	1	2	1	6	
Curriculum C					
Pretest	1	1	3	5	
Posttest	1	2	4	3	

Summary of Responses to Component IG

Users of Curriculum A became generally more positive about aspects of gymnastics related to possible constraints and difficulties than did users of Curriculum B or Curriculum C.

Component IIA - Teacher attitudes toward the enjoyment children derive from gymnastics.

Question 24 - Most children enjoy gymnastics (Table 12).

Results - The general response was very positive for all groups.

- However, in two groups, the group using Curriculum A and the group using Curriculum B, the number of teachers reporting that children enjoy gymnastics increased in the posttest. However, the group using Curriculum A recorded larger increases than the group using Curriculum B in terms of children's enjoyment of gymnastics.

	SA	A	U	DA	SDA	Total
Curriculum A	6	0	0	0	0	6
Curriculum B	-2	2	0	-1	0	-1
Curriculum C	-4	1	0	-1	0	-4

Component IIB - Teacher attitudes toward the achievement and performance by children in gymnastics.

Question 1 - Children's gymnastic sequences should be pleasing to look at (Table 13).

Results - The number of teachers reporting that children's gymnastics sequences should be pleasing to look at increased slightly in all three groups. While most teachers in each group agreed with the question, a slightly larger move towards agreement was noted by users of Curriculum A.

Table 12

Pretest and Posttest Responses to Question 24

Question 24: Most children enjoy gymnastics.

	SA	A	U	DA	SDA
Curriculum A					
Pretest	2	4	4		
Posttest	5	4	1		
Curriculum B					
Pretest	3	5	2		
Posttest	2	7		1	
Curriculum C					
Pretest	4	5	1		
Posttest	2	6	1	1	

Table 13

Pretest and Posttest Responses to Question 1

Question 1: Children's gymnastics sequences should be pleasing to look at.

	SA	A	U	DA	SDA
Curriculum A					
Pretest	1	7	1	1	
Posttest	3	6	1		
Curriculum B					
Pretest	2	7	1		
Posttest	2	8			
Curriculum C					
Pretest	1	6	2	1	
Posttest	1	8	1		

	SA	A	U	DA	SDA	Total
Curriculum A	4	-1	0	1	0	4
Curriculum B	0	1	0	0	0	1
Curriculum C	0	2	0	3	0	3

Component IID - Teacher attitudes toward the educational contributions of gymnastics in meeting the selected aims and objectives outlined in the Program of Studies.

Question 16 - Gymnastics is of inherent value to children (Table 14).

Results - The number of teachers agreeing that they believed gymnastics is of inherent value to children remained fairly high in the posttest for each group. In the posttest though, the largest move towards strong agreement that gymnastics is valuable was polled by users of Curriculum A.

	SA	A	U	DA	SDA	Total
Curriculum A	4	1	0	0	2	7
Curriculum B	2	-1	0	0	0	1
Curriculum C	-2	0	0	1	0	-1

Question 29 - Gymnastics is educationally valuable (Table 15). The response polled for each group was very positive in both the pretest and posttest. The majority of teachers believed that gymnastics is valuable.

Results - In the groups using Curriculum B and Curriculum C, the number of teachers reporting that gymnastics is educationally valuable decreased slightly in the posttest. The group that used Curriculum A reported a slight increase in teachers who believed gymnastics is valuable. The majority of teachers in each group agreed before and after implementation.

Table 14

Pretest and Posttest Responses to Question 16

Question 16: Gymnastics is of inherent value to children.

	SA	A	U	DA	SDA
Curriculum A Pretest		7	2		1
Posttest	2	8			
Curriculum B Pretest	3	6	1		
Posttest	4	5	1		
Curriculum C Pretest	3	6	1	1	
Posttest	2	6	2		

Table 15

Pretest and Posttest Responses to Question 29

Question 29: Gymnastics is educationally valuable.

	SA	A	U	DA	SDA
Curriculum A					
Pretest	1	7	2		
Posttest	3	7			
Curriculum B					
Pretest	5	5			
Posttest	7	2		1	
Curriculum C					
Pretest	3	6	1		
Posttest	2	6	2		

	SA	A	U	DA	SDA	Total
Curriculum A	4	0	0	0	0	4
Curriculum B	4	-3	0	-1	0	0
Curriculum C	-2	0	0	0	0	-2

Summary of Responses to Component IID

Generally, more users of Curriculum A than users of Curriculum B and Curriculum C in the posttest believed that gymnastics makes an educational contribution. Numerically speaking, this belief became even stronger after using the particular curriculum. Users of Curriculum B had the next largest number of responses in agreement, followed by users of Curriculum C.

Component IIIA - Teacher attitude as recipients of preplanned curriculum materials for teaching gymnastics.

Question 2 - There is a lack of useful curriculum materials for elementary school gymnastics (Table 16).

Results - In each group, there was either no or very little increase in the numbers of teachers who agreed that there is a lack of useful curriculum for elementary school gymnastics.

However, the group using Curriculum A became more positive in the posttest about curriculum. This shift towards strong agreement regarding curricula was slightly more evident in the group using Curriculum A.

	SA	A	U	DA	SDA	Total
Curriculum A	-2	1	0	-4	-2	-7
Curriculum B	4	-1	0	1	-2	2
Curriculum C	0	0	0	1	0	1

Component IIIB - Teacher attitudes toward sources of prepared curriculum materials.

Table 16

Pretest and Posttest Responses to Question 2

Question 2: There is a lack of useful curriculum materials for elementary school gymnastics.

	SA	A	U	DA	SDA
Curriculum A					
Pretest	1	3	1	5	
Posttest		4	4	1	1
Curriculum B					
Pretest		5	3	2	
Posttest	2	4	2	1	1
Curriculum C					
Pretest	1	6	1	2	
Posttest	1	6	2	1	

Question 11 - I am able to teach gymnastics from someone else's preplanned curriculum materials (Table 17).

Results - The majority of teachers in each group agreed that they could use someone else's curriculum to teach gymnastics. This agreement was evident both before and after implementation.

The group using Curriculum A however, reported the largest move towards strong agreement about being able to use someone else's curriculum in the posttest. The group using Curriculum B reported the next largest move towards strong agreement. The group using Curriculum C remained constant.

	SA	A	U	DA	SDA	Total
Curriculum A	2	4	0	0	0	6
Curriculum B	2	1	0	0	0	3
Curriculum C	-2	1	0	0	0	-1

Question 17 - Information about the content of gymnastics is more useful than information concerning appropriate methods (Table 18).

Results - Generally, in all three groups, the majority of teachers favoured information about methods more than information about content.

The number of teachers disagreeing that information about the content was more useful increased in the posttest in the group using Curriculum B, and decreased slightly in the other two groups.

	SA	A	U	DA	SDA	Total
Curriculum A	0	3	0	1	0	4
Curriculum B	0	-1	0	-3	0	-4
Curriculum C	0	2	0	1	0	3

Table 17

Pretest and Posttest Responses to Question 11

Question 11: I am able to teach gymnastics from someone else's preplanned curriculum materials.

	SA	A	U	DA	SDA
Curriculum A Pretest		5	5		
Posttest	1	9			
Curriculum B Pretest	1	6	3		
Posttest	2	7	1		
Curriculum C Pretest	2	7	1		
Posttest	1	8	1		

Table 18

Pretest and Posttest Responses to Question 17

Question 17: Information about the content of gymnastics is more useful than information concerning appropriate methods.

	SA	A	U	DA	SDA
Curriculum A					
Pretest			2	8	
Posttest		3		7	
Curriculum B					
Pretest		1	3	6	
Posttest			1	9	
Curriculum C					
Pretest			2	8	
Posttest		2	1	7	

Summary of Responses to Component IIIB

Most teachers in each group were favourable towards externally prepared curricula. While most teachers in each group were supportive of curricula as sources for teaching methods rather than sources of content, the group using Curriculum A became slightly more supportive in this regard.

Component IIIC - Teacher attitudes toward the clarity of content in preplanned curriculum materials.

Question 7 - It is important to understand a gymnastics theme or topic before teaching it (Table 19).

Results - Generally, nearly all teachers in each group agreed that it is important to understand a theme before teaching. No design of curricula used appeared to influence this belief any more than did another design.

For the groups using Curriculum B and Curriculum C, there were only slight increases in the posttest towards strong agreement that understanding a theme is important for teaching. There was no increase for the group using Curriculum A.

	SA	A	U	DA	SDA	Total
Curriculum A	2	-1	0	-1	0	0
Curriculum B	2	0	0	0	0	2
Curriculum C	0	1	0	0	0	1

Question 21 - Someone else's preplanned curriculum materials are weak in showing me how to bring about their written objectives (Table 20).

Results - Only the group using Curriculum C showed an increase in agreement with the view that curricula are strong as guides in directing teachers in realizing objectives.

Table 19

Pretest and Posttest Responses to Question 7

Question 7: It is important to understand a gymnastics theme or topic before teaching it.

	SA	A	U	DA	SDA
Curriculum A					
Pretest	2	7	1		
Posttest	3	6		1	
Curriculum B					
Pretest	3	6	1		
Posttest	4	6			
Curriculum C					
Pretest	3	6	1		
Posttest	3	7			

Table 20

Pretest and Posttest Responses to Question 21

Question 21: Someone else's preplanned curriculum materials are weak in showing me how to bring about their written objectives.

	SA	A	U	DA	SDA
Curriculum A					
Pretest		1	6	3	
Posttest	2	1	4	2	1
Curriculum B					
Pretest			6	4	
Posttest		3	3	4	
Curriculum C					
Pretest		2	3	4	1
Posttest			7	3	

The groups using Curriculum A and Curriculum B were less agreeable in the posttest towards the curricula's strengths in this area. These two groups each had almost equal numbers of teachers both agreeing and disagreeing with the idea that curricula are weak in showing how to bring about objectives.

	SA	A	U	DA	SDA	Total
Curriculum A	4	0	0	1	-2	3
Curriculum B	0	3	0	0	0	3
Curriculum C	0	-2	0	1	2	1

Summary of Responses to Component IIIC

Responses to questions from this component suggested teachers were generally satisfied in both pretest and posttest with the content in available curriculum materials. Most teachers in each group believed that it is important to understand a gymnastics theme before teaching it. However, a large number of teachers in each group indicated in the posttest that preplanned curricula were weak in showing them how to bring about the curricula's written objectives.

Component IIID - Teacher attitudes toward the various formats of preplanned curriculum materials.

Question 12 - Someone else's preplanned lesson materials are best for my teaching of gymnastics (Table 21).

Results - The number of teachers agreeing that someone else's preplanned lesson materials are best for their gymnastics teaching increased in all three groups in the posttest. The group using Curriculum B was the most enthused about using someone else's lesson materials.

Table 21

Pretest and Posttest Responses to Question 12

Question 12: Someone else's preplanned lesson materials are best for my teaching of gymnastics.

	SA	A	U	DA	SDA
Curriculum A					
Pretest	1	3	4	2	
Posttest	1	4	3	2	
Curriculum B					
Pretest	1	3	2	4	
Posttest		6	1	3	
Curriculum C					
Pretest	1	5	3	1	
Posttest	1	5	4		

	SA	A	U	DA	SDA	Total
Curriculum A	0	-1	0	0	0	1
Curriculum B	+2	3	0	+1	0	6
Curriculum C	0	0	0	1	0	1

Component IIIE - Teacher attitudes toward perceived success of implementation in relation to curriculum materials used.

Question 6 - The content of my gymnastics classes differs from what the Program of Studies recommends (Table 22).

Results - The majority of teachers in each group agreed in the posttest that the content of their gymnastics class is the same as what the Program of Studies recommends. However, slightly more teachers using Curriculum A and Curriculum B indicated a confidence about the validity of their program both before and after implementation than did teachers in the other groups.

	SA	A	U	DA	SDA	Total
Curriculum A	0	0	0	1	0	1
Curriculum B	0	1	0	-2	2	1
Curriculum C	0	1	0	2	0	3

Component IVB - Teacher attitudes toward the implied or stated purposes in gymnastics.

Question 25 - The major value of gymnastics in the school setting is that it is a break from academic studies (Table 23).

Results - Generally, most teachers in each group believed that there is more value to gymnastics than serving as a break in academic studies. No significant trend was noted in the groups towards agreeing or disagreeing with this statement.

Table 54

Pretest and Posttest Responses to Question 6

Question 6: With respect to what is meant by the theme of balance, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	2	6	2	
Posttest		2	7	1
Curriculum B				
Pretest	1	4	5	
Posttest		3	7	
Curriculum C				
Pretest		9		1
Posttest		4	6	

A, and Curriculum C, reported the largest increases.

	NK	LK	SK	CK	Total
Curriculum A	4	4	5	2	15
Curriculum B	2	1	2	0	5
Curriculum C	0	5	6	-2	9

Question 21 - With respect to other movement concepts which help develop the theme of balance, I feel I have . . . (Table 55).

Results - The number of teachers reporting that they have a little or sufficient knowledge increased in the posttest only in the group using Curriculum A.

Generally, the use of the different curricula did not affect teachers' knowledge regarding other movement concepts which help develop the theme of balance. Most teachers in each group reported either no knowledge or a little knowledge in the posttest.

	NK	LK	SK	CK	Total
Curriculum A	6	-2	1	0	5
Curriculum B	0	0	0	0	0
Curriculum C	-2	0	-1	0	-3

Summary of Responses to Component II

Users of Curriculum A polled the greatest increase in responses towards the comprehensive knowledge regarding related movement concepts.

Table 56 has provided a summary of the weightings for each question. This system facilitates a comparison of changes from pretest to posttest among the three groups for all questions related to perceived knowledge. The conclusions outlined in Chapter 5 have been drawn from information provided in this chapter and in this table.

Table 55

Pretest and Posttest Responses to Question 21

Question 21: With respect to other movement concepts which help develop the theme of balance, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	5	5		
Posttest	2	7	1	
Curriculum B				
Pretest	3	5	2	
Posttest	3	5	2	
Curriculum C				
Pretest	2	6	2	
Posttest	3	6	1	

Table 56

Knowledge: Comparison of Changes: Pretest to Posttest for All Perceived Knowledge Questions

Components and Questions	Curriculum A					Curriculum B					Curriculum C				
	NK	LK	SK	CK	Total	NK	LK	SK	CK	Total	NK	LK	SK	CK	Total
Component IA Curriculum															
Question 7 Understand.(+)	2	2	3	0	7	4	-2	0	0	2	4	-3	-1	0	0
Question 19 Preparing (+)	2	4	4	2	12	2	-2	-1	0	-1	4	0	2	0	6
Component IB Aims (Bal.)															
Question 1 Knowledge Children (+)	2	4	5	0	11	4	0	2	0	6	2	1	0	0	+1
Question 8 Value of Balance (+)	2	4	4	2	12	2	+1	2	0	5	6	-1	2	0	7
Component IC Objectives															
Question 15 Apparatus (+)	8	-0	4	0	12	4	2	4	0	10	10	-5	0	0	5
Question 18 Sequences (+)	4	5	6	2	17	2	0	1	0	3	4	2	4	0	10
Component ID Content															
Question 20 Theme Use (+)	8	-1	2	2	11	6	-2	1	0	5	6	-2	1	0	5
Question 9 Warmup (+)	2	7	8	0	17	4	1	2	2	9	2	1	1	2	6
Component IE Methods															
Question 13 Problem-Solving (+)	8	0	4	0	12	2	2	3	0	7	8	-4	0	0	4

Table 22

Pretest and Posttest Responses to Question 6

Question 6: The content of my gymnastics classes differs from what the Program of Studies recommends.

	SA	A	U	DA	SDA
Curriculum A Pretest			1	9	
Posttest			2	8	
Curriculum B Pretest		2	4	3	1
Posttest		3	2	5	
Curriculum C Pretest		2		8	
Posttest		3	1	6	

Table 23

Pretest and Posttest Responses to Question 25

Question 25: The major value of gymnastics in the school setting is that it is a break from academic studies.

	SA	A	U	DA	SDA
Curriculum A					
Pretest		1		6	3
Posttest			3	5	2
Curriculum B					
Pretest			1	4	5
Posttest		1		7	2
Curriculum C					
Pretest		1	1	5	3
Posttest			1	7	2

	SA	A	U	DA	SDA	Total
Curriculum A	0	-1	0	1	2	2
Curriculum B	0	1	0	-3	6	4
Curriculum C	0	-1	0	-2	+2	-1

Question 18 - I understand the objectives in gymnastics for children (Table 24).

Results - In all three groups, the number of teachers reporting that they understood the objectives in gymnastics increased in the posttest.

However, this increase was a little less evident for users of Curriculum C.

The groups using Curriculum A and Curriculum B moved towards agreement about their ability to understand gymnastics' objectives while the other group in the posttest showed less confidence and change.

	SA	A	U	DA	SDA	Total
Curriculum A	0	3	0	2	0	5
Curriculum B	0	4	0	1	0	5
Curriculum C	0	0	0	2	0	2

Question 22 - I am unsure of what is expected by children in gymnastics (Table 25).

Results - The number of teachers agreeing that they were unsure of what was expected by the children increased in the posttest for groups that used Curriculum B and Curriculum C. Only the group using Curriculum A had a shift towards agreement that they were sure of the expectations.

More teachers using Curriculum A were sure of what is expected by children after use of their curriculum than were the other two groups.

Table 24

Pretest and Posttest Responses to Question 18

Question 18: I understand the objectives in gymnastics for children.

	SA	A	U	DA	SDA
Curriculum A					
Pretest		5	3	2	
Posttest		8	2		
Curriculum B					
Pretest		5	4	1	
Posttest		9	1		
Curriculum C					
Pretest		6	1	3	
Posttest		6	3	1	

Table 25

Pretest and Posttest Responses to Question 22

Question 22: I am unsure of what is expected by children in gymnastics.

	SA	A	U	DA	SDA
Curriculum A					
Pretest		6	1	2	1
Posttest		2		8	
Curriculum B					
Pretest		2	4	4	
Posttest		6	1	3	
Curriculum C					
Pretest	1	2		7	
Posttest		4	2	4	

	SA	A	U	DA	SDA	Total
Curriculum A	0	-4	0	-6	-2	-12
Curriculum B	0	4	0	1	0	5
Curriculum C	2	2	0	3	0	3

Summary of Responses to Component IVB

Generally, the teachers who used Curriculum A were the most aware of the implied or stated purposes in gymnastics.

Component IVC - Teacher attitudes toward the subject content of Division Two gymnastics at the Elementary School level.

Question 5 - It is necessary to know how to use themes in order to teach gymnastics (Table 26).

Results - Generally, most teachers in each group agreed that themes and their use are important. However, the group using Curriculum B moved towards agreement in slightly more numbers in the posttest than teachers using the other two curricula.

The number of teachers reporting that they agreed that it is necessary to know how to use themes increased in groups using Curriculum B and Curriculum C and decreased in the group using Curriculum A.

	SA	A	U	DA	SDA	Total
Curriculum A	2	-2	0	-2	0	-2
Curriculum B	2	3	0	1	0	6
Curriculum C	0	4	0	0	0	4

Question 14 - Gymnastics is an inherently dangerous activity (Table 27).

Results - Generally, the majority of all teachers in each group did not agree that it is inherently dangerous and no curriculum appeared to significantly alter this belief after implementation.

The number of teachers indicating that gymnastics is not a

Table 26

Pretest and Posttest Responses to Question 5

Question 5: It is necessary to know how to use themes in order to teach gymnastics.

	SA	A	U	DA	SDA
Curriculum A					
Pretest		7	3		
Posttest	1	5	2	2	
Curriculum B					
Pretest		4	4	2	
Posttest	1	7	1	1	
Curriculum C					
Pretest		5	4	1	
Posttest		9		1	

Table 27

Pretest and Posttest Responses to Question 14

Question 14: Gymnastics is an inherently dangerous activity.

	SA	A	U	DA	SDA
Curriculum A					
Pretest		3	3	4	
Posttest		3	1	5	1
Curriculum B					
Pretest		1	1	7	1
Posttest		2		7	1
Curriculum C					
Pretest		1	2	7	
Posttest			1	8	1

dangerous activity increased in the groups using Curriculum A and Curriculum C in the posttest. Little significant change from pretest to posttest was noted for users of Curriculum B.

	SA	A	U	DA	SDA	Total
Curriculum A	0	0	0	-1	-2	-3
Curriculum B	0	1	0	0	0	1
Curriculum C	0	-1	0	-1	-2	-4

Summary of Responses to Component IVC

The majority of all teachers were positive towards the selected aspects of the content of gymnastics discussed in this component. No curricular design appeared to be more influential, generally, than the others for this component.

Component VA - Teacher attitudes toward the skills achieved by children in work on the theme of balance.

Question 2 - Communicating to a parent what children should learn in a theme like balance is difficult (Table 28).

Results - The number of teachers reporting that communicating to a parent is difficult decreased only for the group using Curriculum A in the posttest. The groups using Curriculum B and Curriculum C showed no significant move towards agreement that they could communicate to a parent what children should learn in balance.

	SA	A	U	DA	SDA	Total
Curriculum A	-2	-1	0	-2	-2	-7
Curriculum B	0	0	0	0	0	0
Curriculum C	-2	3	0	0	0	1

Question 13 - Children can be expected to understand a concept like balance from their work on balance (Table 29).

Table 28

Pretest and Posttest Responses to Question 3

Question 3: Communicating to a parent what children should learn in a theme like balance is difficult.

	SA	A	U	DA	SDA
Curriculum A					
Pretest	1	4	4	1	
Posttest		3	3	3	1
Curriculum B					
Pretest		3	2	5	
Posttest		3	2	5	
Curriculum C					
Pretest	1	2	4	3	
Posttest		5	2	3	

Table 29

Pretest and Posttest Responses to Question 13

Question 13: Children can be expected to understand a concept like balance from their work on balance.

	SA	A	U	DA	SDA
Curriculum A					
Pretest	1	5	4		
Posttest	3	7			
Curriculum B					
Pretest	2	6	2		
Posttest	2	8			
Curriculum C					
Pretest	2	5	2	1	
Posttest		9		1	

Results - Generally, the majority of all teachers agreed that work on balance can contribute to children's understanding of balance, and implementation of each curriculum only reinforced this agreement further in each group. The number of teachers reporting that children can be expected to understand a concept like balance from their work on balance increased in all three groups in the posttest.

	SA	A	U	DA	SDA	Total
Curriculum A	4	2	0	0	0	6
Curriculum B	0	2	0	0	0	2
Curriculum C	-4	4	0	0	0	0

Summary of Responses to Component VA

The use of Curriculum A appeared to be slightly more influential in the posttest in causing teachers to believe that children can understand balance, both as a skill and a concept. The users of Curriculum A were the only group which showed an increase in responses in the posttest towards strong disagreement that it is difficult to communicate to a parent what children should learn about balance.

Component VB - Teacher attitudes toward preparation for instruction of the theme of balance.

Question 20 - It is necessary to understand a concept like balance before teaching it (Table 30).

Results - Generally, most teachers believed it is necessary to understand balance, and no curricular design appeared to be any more significantly influential than the other in altering this belief. The number of teachers reporting that it is necessary to understand balance before teaching it increased in all three groups in the posttest.

Table 30

Pretest and Posttest Responses to Question 20

Question 20: It is necessary to understand a concept like balance before teaching it.

	SA	A	U	DA	SDA
Curriculum A					
Pretest	1	6	2		
Posttest	3	6		1	
Curriculum B					
Pretest		9	1		
Posttest	1	9			
Curriculum C					
Pretest	2	7		1	
Posttest	1	9			

Question 20:

	SA	A	U	DA	SDA	Total
Curriculum A	2	0	0	-1	0	1
Curriculum B	2	0	0	0	0	2
Curriculum C	-2	2	0	1	0	1

Table 31 has provided a summary of the weightings for each question. This system facilitates a comparison of changes from pretest to posttest among the three groups for all questions related to attitudes. The conclusions outlined in Chapter 5 have been drawn from the information provided in this chapter and in this table.

Table 31

Attitudes: A Comparison of Changes From Pretest to Posttest for All Attitude Questions

Components and Questions	Curriculum A SA	A	U	D	SD	Total	Curriculum B SA	A	U	D	SD	Total	Curriculum C SA	A	U	D	SD	Total
Component IA Enjoyable																		
Question 8 Enjoy (+)	2	1	0	2	0	5	-4	-3	0	-1	-2	-4	0	3	-1	-2	0	5
Question 23 Effort (-)	0	0	0	-1	-2	-3	0	2	0	-2	0	0	-2	1	0	0	-8	4
Question 10 Fun (+)	4	1	0	1	0	6	-2	2	0	0	0	0	0	2	0	1	0	3
Component IC Competence																		
Question 9 Uncomfortable (-)	-2	-1	0	-2	-2	-7	0	-2	0	-2	-2	-6	2	-1	0	0	0	1
Question 27 Able (+)	2	1	0	1	0	4	-2	-1	0	1	0	-2	-2	-3	0	1	0	+2
Question 28 Teach (+)	2	-1	0	1	0	2	0	0	0	-1	0	-1	0	2	0	-1	0	1
Component ID Problem Solving																		
Question 15 Mov. Ed.(+)	2	3	0	1	0	6	0	2	0	-2	0	0	0	-1	0	-2	0	-3
Component IG Difficulties																		
Question 26 Constraints(+)	4	-2	0	1	-2	1	4	-2	0	-2	0	0	-6	3	0	0	0	-3
Question 4 Demonstrations (-)	0	1	0	0	-2	-1	0	-3	0	-1	2	-2	2	-3	0	-1	-2	-4

Table 31 (continued)

Components and Questions	Curriculum A SA	A	U	D	SD	Total	Curriculum B SA	A	U	D	SD	Total	Curriculum C SA	A	U	D	SD	Total
Question 19 Specialist (1)	-2	0	0	-3	0	-5	2	1	0	-1	2	4	0	1	0	2	0	3
Component IIA Children																		
Question 24 Enjoy (+)	6	0	0	0	0	6	-2	2	0	-1	0	-1	-4	1	0	-1	0	-4
Component IIC Achievement																		
Question 1 Sequence (+)	4	-1	0	1	0	4	0	1	0	0	0	1	0	2	0	1	3	1
Component IID Contribution																		
Question 16 Value (+)	4	1	0	0	2	7	2	-1	0	0	0	1	-2	0	0	1	0	-1
Question 29 Valuable (+)	4	0	0	0	0	4	4	-3	0	-1	0	0	-2	0	0	0	0	-2
Component IIIA P.P. Curric.																		
Question 2 Lack (-)	-2	1	0	-4	-2	-7	4	-1	0	1	-2	2	0	0	0	1	0	1
Component IIIB P. Curr.																		
Question 11 Able (+)	2	4	0	0	0	6	2	1	0	0	0	3	-2	1	0	0	0	-1
Question 17 Info. (+)	0	3	0	1	0	4	0	-1	0	-3	0	-4	0	2	0	1	0	3
Component IIIC Clarity																		
Question 7 Underst. (+)	2	-1	0	-1	0	0	2	0	0	0	0	2	0	1	0	0	0	1

Table 31 (continued)

Components and Questions		Curriculum A						Curriculum B						Curriculum C					
		SA	A	U	D	SD	Total	SA	A	U	D	SD	Total	SA	A	U	D	SD	Total
Question 21 Someone Else's	(-)	0	+1	0	0	0	1	2	3	0	1	0	6	0	0	0	1	0	1
Component IIIE Implement	(-)	0	0	0	1	0	1	0	1	0	-2	2	1	0	1	0	2	0	3
Component IVA Purposes																			
Question 25 Break	(-)	0	-1	0	1	2	2	0	1	0	-3	6	4	0	-1	0	-2	+2	-1
Question 18 Understand	(+)	0	3	0	2	0	5	0	4	0	1	0	5	0	0	0	2	0	2
Question 22 Unsure	(-)	0	-4	0	-6	-2	-12	0	4	0	1	0	5	-2	2	0	3	0	3
Component IVC Subject																			
Question 5 Themes	(+)	2	-2	0	-2	0	-2	2	3	0	1	0	6	0	4	0	0	0	4
Question 14 Dangerous	(-)	0	0	0	-1	-2	-3	0	1	0	0	0	1	0	-1	0	-1	-2	-4
Component VA Balance																			
Question 3 Communicate	(-)	-2	-1	0	-2	-2	-7	0	0	0	0	0	0	-2	3	0	0	0	1
Question 3 Understand	(+)	4	2	0	0	0	6	0	2	0	0	0	2	-4	4	0	0	0	0
Component VB Prep. for Instr.																			
Question 20 Need to Under.	(+)	2	0	0	-1	0	1	2	0	0	0	0	2	-2	2	0	1	0	1

Description of Responses to the Perceived Knowledge Questionnaire

Through this questionnaire, the researcher attempted to obtain information about teachers' perceived knowledge regarding the theme of balance. A knowledge questionnaire was given to each teacher before and after implementation of a selected curriculum. Twenty-four questions were grouped under twelve selected components which were designed to give a comprehensive representation of the variable being tested. The respondents selected one of four responses: 1) no knowledge, 2) a little knowledge, 3) sufficient knowledge, and 4) comprehensive knowledge. The information for each question has been summarized in the following manner:

1. Where it was significant, the paragraphs in the Results section discussed the changes from pretest to posttest for each group and discussed the differences among groups in the posttest.
2. A summary of responses for each component has been included.
3. A numerical breakdown of responses outlined in tables follows each question.
4. A summary of weightings has been included for each question. A weighting system has been used to facilitate a comparison of changes from pretest to posttest for each question. The procedures used were:
    a) the increase or decrease in number of responses from pretest to posttest in the no knowledge (NK), a little knowledge (LK), sufficient knowledge (SK), and comprehensive knowledge (CK) categories have been noted for each group for each question,
    b) The categories have been assigned a weighting (no knowledge

-2; a little knowledge -1; sufficient knowledge +1; and comprehensive knowledge +2. The number of increases or decreases for each category have been multiplied by the weightings. This result, and the total for the group have been recorded below the writeup of the results. Table 56 illustrates a comparison of each group for all questions.

c) where questions have been worded positively, higher positive totals should be used for comparisons. Where questions have been worded negatively, higher negative totals should be used for comparison.

Component IA - Teacher perceived knowledge regarding curriculum materials in Grade Four work on the theme of balance.

Question 7 - Concerning my understanding of prepared curriculum materials regarding balance, I feel I have . . . (Table 32).

Results - The number of teachers indicating that they have understanding about curricula used to teach balance increased in all three groups in the posttest. The largest increase was noted for the group using Curriculum A.

Slightly more teachers using Curriculum A indicated sufficient knowledge about curricula in the posttest than did teachers in the other groups.

	NK	LK	SK	CK	Total
Curriculum A	2	2	3	0	7
Curriculum B	4	-2	0	0	2
Curriculum C	4	-3	-1	0	0

Question 19 - Concerning preparing gymnastics activities from preplanned

Table 32

Pretest and Posttest Responses to Question 7

Question 7: Concerning my understanding of prepared curriculum materials regarding balance, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	1	5	4	
Posttest		3	7	
Curriculum B				
Pretest	2	4	4	
Posttest		6	4	
Curriculum C				
Pretest	3	4	3	
Posttest	1	7	2	

curriculum materials, I feel I have . . . (Table 33).

Results - The number of teachers reporting that they have sufficient knowledge concerning preparation of gymnastics activities from curricula increased in the posttest for the groups using Curriculum A and Curriculum C, and decreased slightly for the group using Curriculum B. The largest increase towards and largest numbers of teachers reporting increased knowledge occurred with the group using Curriculum A.

	NK	LK	SK	CK	Total
Curriculum A	2	4	4	+2	12
Curriculum B	2	-2	-1	0	-1
Curriculum C	4	0	2	0	6

Summary of Responses to Component IA

More users of Curriculum A than either Curriculum B or Curriculum C replied that they had sufficient or comprehensive knowledge regarding curriculum materials in the posttest. Users of Curriculum A also polled the greatest increases in sufficient knowledge in the posttest.

Component IB - Teacher perceived knowledge regarding aims for Grade Four work on the theme of balance.

Question 1 - Concerning the knowledge children should have about balance, I feel I have . . . (Table 34).

Results - In all three groups there was an increase in the posttest in the number of teachers who reported that their knowledge had increased concerning the knowledge children should have about balance.

Again, however, the largest increase was noted for the group using Curriculum A.

Table 33

Pretest and Posttest Responses to Question 19

Question 19: Concerning preparing gymnastics activities from preplanned curriculum materials, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	1	6	3	
Posttest		2	7	1
Curriculum B				
Pretest	1	3	6	
Posttest		5	5	
Curriculum C				
Pretest	2	5	3	
Posttest		5	5	

Table 34

Pretest and Posttest Responses to Question 1

Question 1: Concerning the knowledge children should have about balance, I feel I have

-75

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	1	9		
Posttest		5	5	
Curriculum B				
Pretest	2	6	2	
Posttest		6	4	
Curriculum C				
Pretest	1	8	1	
Posttest		9	1	

Slightly more teachers using Curriculum A and Curriculum B indicated sufficient knowledge about children's knowledge in the posttest than did teachers using Curriculum C.

	NK	LK	SK	CK	Total
Curriculum A	2	4	5	0	11
Curriculum B	4	0	2	0	6
Curriculum C	2	-1	0	0	1

Question 8 - Regarding the educational value of the theme of balance, I feel I have . . . (Table 35).

Results - The number of teachers reporting that they have sufficient knowledge regarding the educational value of the theme of balance increased in all three groups in the posttest. Slightly more teachers using Curriculum A and Curriculum C than teachers using Curriculum B indicated sufficient or comprehensive knowledge in the posttest regarding the educational value of the theme of balance.

	NK	LK	SK	CK	Total
Curriculum A	2	4	4	2	12
Curriculum B	2	+1	2	0	5
Curriculum C	6	-1	2	0	7

Summary of Responses to Component IB

Users of Curriculum A polled the greatest increases in responses in the posttest towards comprehensive knowledge in questions regarding the aims of Grade Four work on balance.

Component IC - Teacher perceived knowledge regarding setting objectives for Grade Four work on the theme of balance.

Question 15 - Concerning the steps in the buildup of the use of apparatus for balance, I feel I have . . . (Table 36).

Results - In all three groups there was an increase in the posttest

Table 35

Pretest and Posttest Responses to Question 8

Question 8: Regarding the educational value of the theme of balance I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	1	6	3	
Posttest		2	7	1
Curriculum B				
Pretest	1	3	5	1
Posttest		2	7	1
Curriculum C				
Pretest	3	5	2	
Posttest		6	4	

Table 36

Pretest and Posttest Responses to Question 15

Question 15: Concerning the steps in the buildup of the use of apparatus for balance I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	4	5	1	
Posttest		5	5	
Curriculum B				
Pretest	2	6	2	
Posttest		4	6	
Curriculum C				
Pretest	5	5		
Posttest		10		

in the number of teachers indicating that they had gained some knowledge concerning the use of apparatus. The largest increases in sufficient knowledge occurred in the groups using Curriculum A and Curriculum B.

	NK	LK	SK	CK	Total
Curriculum A	8	0	4	0	12
Curriculum B	4	2	4	0	10
Curriculum C	10	-5	0	0	5

Question 18 - Concerning children performing individual sequences with balance, I feel I have . . . (Table 37).

Results - The number of teachers reporting that they have sufficient knowledge concerning children's sequences with balance increased in all three groups in the posttest. The largest increase occurred in the group using Curriculum A. In the posttest, the largest number of teachers reporting sufficient or comprehensive knowledge concerning children performing individual sequences, was reported in the group using Curriculum A.

	NK	LK	SK	CK	Total
Curriculum A	4	5	6	2	17
Curriculum B	2	0	1	0	3
Curriculum C	4	2	4	0	10

Summary of Responses to Component IC

Users of Curriculum A changed most in knowledge in the posttest in the component's questions regarding setting objectives for balance.

Component ID - Teacher perceived knowledge regarding selecting content for Grade Four work on the theme of balance.

Question 20 - Concerning the use of themes that should precede and follow the theme of balance, I feel I have . . .

Table 37

Pretest and Posttest Responses to Question 18

Question 18: Concerning children performing individual sequences with balance, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	2	6	2	
Posttest		1	8	1
Curriculum B				
Pretest	2	3	5	
Posttest	1	3	6	
Curriculum C				
Pretest	2	7	1	
Posttest		5	5	

(Table 38).

Results - The number of teachers indicating that they had sufficient knowledge about the themes that should precede and follow balance increased in the posttest in all three groups. Slightly more teachers in the posttest using Curriculum A indicated sufficient or comprehensive knowledge about the themes that should precede and follow the theme of balance than teachers in the other groups.

	NK	LK	SK	CK	Total
Curriculum A	8	-1	2	2	11
Curriculum B	6	-2	1	0	5
Curriculum C	6	-2	1	0	5

Question 9 - Concerning my choosing appropriate warmup activities, I feel I have . . . (Table 39).

Results - The number of teachers reporting that they have sufficient knowledge about appropriate warmup activities increased in all three groups in the posttest.

Again, both the largest increase and largest number of teachers reporting sufficient knowledge after implementation concerning warmups were reported in the group using Curriculum A.

	NK	LK	SK	CK	Total
Curriculum A	2	7	8	0	17
Curriculum B	4	1	2	2	9
Curriculum C	2	1	1	2	6

Summary of Responses to Component ID

More responses from users of Curriculum A than either Curriculum B or Curriculum C were polled towards comprehensive knowledge in posttests in the component's questions regarding section of content for work on

Table 38

Pretest and Posttest Responses to Question 20

Question 20: Concerning the use of themes that should precede and follow the theme of balance, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	5	5		
Posttest	1	6	2	1
Curriculum B				
Pretest	6	4		
Posttest	3	6	1	
Curriculum C				
Pretest	6	4		
Posttest	3	6	1	

Table 39

Pretest and Posttest Responses to Question 9

Question 9: Concerning my choosing appropriate warmup activities, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	1	8	1	
Posttest		1	9	
Curriculum B				
Pretest	2	5	3	
Posttest		4	5	1
Curriculum C				
Pretest	1	6	3	
Posttest		5	4	1

balance.

Component IE - Teacher perceived knowledge regarding teaching methods for Grade Four work on the theme of balance.

Question 13 - Concerning the appropriate use of problem-solving and exploration for balance lessons, I feel I have . . . (Table 40).

Results - The number of teachers indicating that they have a little or sufficient knowledge regarding problem-solving and exploration increased in the posttest for the group using Curriculum A.

The group using Curriculum C did not increase as much in the posttest in sufficient knowledge as did the other two groups. The groups using Curriculum A and Curriculum B increased more towards sufficient knowledge regarding problem-solving and exploration.

	NK	LK	SK	CK	Total
Curriculum A	8	0	4	0	12
Curriculum B	2	2	3	0	7
Curriculum C	8	-4	0	0	4

Question 10 - Concerning the use of demonstrations, I feel I have . . . (Table 41).

Results - The number of teachers reporting that they have sufficient knowledge concerning demonstrations, increased in the posttest for each group.

No curriculum used appeared to be more influential than the other regarding teacher's knowledge gains concerning the use of demonstrations.

However, the group using Curriculum B increased in

Table 40

Pretest and Posttest Responses to Question 13

Question 13: Concerning the appropriate use of problem-solving and exploration for balance lessons, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	5	4	1	
Posttest	1	4	5	
Curriculum B				
Pretest	2	7	1	
Posttest	1	5	4	
Curriculum C				
Pretest	4	5	1	
Posttest		9	1	

Table 41

Pretest and Posttest Responses to Question 10

Question 10: Concerning the use of demonstration, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	2	6	2	
Posttest	1	5	4	
Curriculum B				
Pretest	2	5	3	
Posttest	1	3	6	
Curriculum C				
Pretest	1	8	1	
Posttest	2	4	4	

knowledge to a slightly greater extent.

	NK	LK	SK	CK	Total
Curriculum A	2	1	2	0	5
Curriculum B	2	2	3	0	7
Curriculum C	-2	4	3	0	5

Summary of Responses to Component IE

The groups who used Curriculum A and Curriculum B polled greater increases in the posttest in responses towards sufficient knowledge regarding selected teaching methods than the group who used Curriculum C.

Component IF - Teacher perceived knowledge regarding organizing a lesson for Grade Four teaching of the theme of balance.

Question 23 - Concerning the organization of a lesson to get the best results from my children in balance, I feel I have . . . (Table 42).

Results - The number of teachers reporting that they have sufficient knowledge about organization of lessons in gymnastics increased in all three groups in the posttest. The largest increase in, as well as the largest numbers among, groups reporting sufficient knowledge in the posttest occurred with the group using Curriculum A.

	NK	LK	SK	CK	Total
Curriculum A	2	5	5	2	14
Curriculum B	2	0	1	0	3
Curriculum C	6	0	3	0	9

Question 2 - Concerning questioning my children to help them improve in their work on balance, I feel I have . . . (Table 43).

Results - The number of teachers reporting that they have sufficient knowledge concerning questioning techniques increased in the posttest for all three groups. The largest increase,

Table 42

Pretest and Posttest Responses to Question 23

Question 23: Concerning the organization of a lesson to get the best results from my children in balance, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	1	7	2	
Posttest		2	7	1
Curriculum B				
Pretest	2	5	3	
Posttest	1	5	4	
Curriculum C				
Pretest	3	6	1	
Posttest		6	4	

Table 43

Pretest and Posttest Responses to Question 2

Question 2: Concerning questioning my children to help them improve their work on balance, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	2	8		
Posttest		3	6	1
Curriculum B				
Pretest	2	6	2	
Posttest		5	5	
Curriculum C				
Pretest	3	6	1	
Posttest	1	6	3	

however, occurred in the group using Curriculum A. Again, the group using Curriculum A had slightly more teachers who indicated that they had either sufficient or comprehensive knowledge in the posttest than the other groups.

	NK	LK	SK	CK	Total
Curriculum A	4	5	6	2	17
Curriculum B	4	1	3	0	8
Curriculum C	4	0	2	0	6

Summary of Responses to Component IF

In the posttest, users of Curriculum A polled the greatest increase in responses towards comprehensive knowledge in selected aspects of organizing lessons for teaching balance. Users of Curriculum B and Curriculum C were approximately equal in the amount of increase they showed towards increased knowledge in questions in this component.

Component IG - Teacher perceived knowledge regarding class management in Grade Four work on the theme of balance.

Question 17 - Concerning organizing my children to do balance work on apparatus, I feel I have . . . (Table 44).

Results - The number of teachers reporting that they have sufficient knowledge concerning organizing children for apparatus work increased in the posttest in all three groups. The largest increases in teachers reporting sufficient knowledge occurred in the groups using Curriculum A and Curriculum C.

	NK	LK	SK	CK	Total
Curriculum A	4	2	3	2	11
Curriculum B	2	0	1	0	3
Curriculum C	2	3	4	0	9

Table 44

Pretest and Posttest Responses to Question 17

Question 17: Concerning organizing my children to do balance work on apparatus, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	2	4	4	
Posttest		2	7	1
Curriculum B				
Pretest	1	4	5	
Posttest		4	6	
Curriculum C				
Pretest	1	5	4	
Posttest		2	8	

Question 14 - With respect to achieving maximum activity and participation by children in lessons on balance, I feel I have . . . Table 45).

Results - The number of teachers reporting that they have sufficient knowledge concerning maximizing children's activity and participation increased in the posttest in all three groups.

No curriculum appeared to be more influential than another on the results in the posttest with respect to the knowledge teachers have concerning achieving maximum activity and participation in balance lessons.

	NK	LK	SK	CK	Total
Curriculum A	4	1	2	2	9
Curriculum B	6	-1	2	0	7
Curriculum C	4	2	4	0	10

Summary of Responses to Component IG

Users of Curriculum A and C polled the greatest increase in responses towards comprehensive knowledge in the posttest regarding the selected aspects of class management for work on balance.

Component IH - Teacher perceived knowledge regarding evaluation in Grade Four work on the theme of balance.

Question 3 - Regarding the process used in evaluating my children's work in balance, I feel I have . . . (Table 46).

Results - The number of teachers reporting that they have sufficient knowledge concerning evaluation processes increased in the posttest for all three groups. The largest increases however, occurred among the groups using Curriculum A and

Table 45

Pretest and Posttest Responses to Question 14

Question 14: With respect to achieving maximum activity and participation by children in lessons on balance, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	2	4	4	
Posttest		3	6	1
Curriculum B				
Pretest	3	2	5	
Posttest		3	7	
Curriculum C				
Pretest	2	7	1	
Posttest		5	5	

Table 46

Pretest and Posttest Responses to Question 3

Question 3: Regarding the process used in evaluating my children's work in balance, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	1	7	2	
Posttest		4	5	1
Curriculum B				
Pretest	2	7	1	
Posttest		8	2	
Curriculum C				
Pretest	2	7	1	
Posttest		6	3	1

Curriculum C.

The groups using Curricula A and C appeared to have more teachers indicating more knowledge after implementation concerning the process used in evaluating children than did the other groups.

	NK	LK	SK	CK	Total
Curriculum A	2	3	3	2	10
Curriculum B	4	-1	1	0	4
Curriculum C	4	1	2	2	9

Question 16 - With respect to the variety of ways to evaluate children's work in balance, I feel I have . . . (Table 47).

Results - The number of teachers reporting that they have sufficient knowledge regarding the variety of ways to evaluate children increased in the posttest in all three groups. The largest increase in teachers reporting sufficient knowledge occurred in the group using Curriculum A. The teachers in the group using Curriculum C reported fairly substantial gains in knowledge as well.

	NK	LK	SK	CK	Total
Curriculum A	6	2	5	0	13
Curriculum B	4	-1	1	0	4
Curriculum C	8	-3	0	2	7

Summary of Responses to Component IH

Users of Curriculum A polled the greatest increases in responses in the posttest towards comprehensive knowledge regarding evaluation in the posttest.

- Teacher perceived knowledge regarding observation in Grade Four work on the theme of balance.

Question 4 - With respect to what I should be observing to improve my

Table 47

Pretest and Posttest Responses to Question 16

Question 16: With respect to the variety of ways to evaluate children's work in balance, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	3	6	1	
Posttest		4	6	
Curriculum B				
Pretest	2	7	1	
Posttest		8	2	
Curriculum C				
Pretest	4	5	1	
Posttest		8	1	1

children's work on balance, I feel I have . . . (Table 48).

Results - The number of teachers indicating that they have a little or sufficient knowledge regarding observation increased in the posttest in all three groups. Slightly more teachers using Curriculum A indicated sufficient or comprehensive knowledge in the posttest than teachers in the other groups.

	NK	LK	SK	CK	Total
Curriculum A	4	4	5	2	15
Curriculum B	4	-2	0	0	2
Curriculum C	2	0	1	0	3

Question 11 - With respect to what to look for to ensure safety, I feel I have . . . (Table 49).

Results - The number of teachers reporting that they have sufficient knowledge about observation for safety's sake increased in the posttest in each group. No curriculum appeared to be significantly more influential than another in affecting knowledge gains after their respective implementation, although use of Curriculum C appeared to be slightly more influential here.

	NK	LK	SK	CK	Total
Curriculum A	2	0	1	0	3
Curriculum B	0	2	1	2	5
Curriculum C	2	2	3	0	7

Summary of Responses to Component II

More users of Curriculum A than Curriculum B or Curriculum C increased in knowledge in the posttest regarding evaluation.

Component IJ - Teacher perceived knowledge regarding apparatus in Grade

Table 48

Pretest and Posttest Responses to Question 4

Question 4: With respect to what I should be observing to improve my children's work on balance, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	3	7		
Posttest	1	3	5	1
Curriculum B				
Pretest	2	5	3	
Posttest		7	3	
Curriculum C				
Pretest	2	7	1	
Posttest	1	7	2	

Table 49

Pretest and Posttest Responses to Question 11

Question 11: With respect to what to look for to ensure safety, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	1	4	5	
Posttest		4	6	
Curriculum B				
Pretest	1	4	5	
Posttest	1	2	6	1
Curriculum C				
Pretest	1	5	4	
Posttest		3	7	

Four work on the theme of balance.

Question 5 - With respect to the types of apparatus children can use for balance activities, I feel I have . . . (Table 50).

Results - The number of teachers indicating that they had gained knowledge about apparatus remained about the same in the posttest in all groups, although use of Curriculum C appeared to be slightly more influential here.

	NK	LK	SK	CK	Total
Curriculum A	0	1	-1	0	0
Curriculum B	0	0	0	0	0
Curriculum C	0	2	2	0	4

Question 12 - With respect to children applying balance onto apparatus, I feel I have . . . (Table 51).

Results - The number of teachers reporting that they have a little knowledge about children using apparatus for balance activities increased in the posttest in each group. Slightly more teachers using Curriculum A indicated sufficient knowledge in the posttest than did teachers in the other groups.

	NK	LK	SK	CK	Total
Curriculum A	2	3	4	0	9
Curriculum B	2	0	1	0	3
Curriculum C	6	-1	2	0	7

Summary of Responses to Component IJ

Regarding application of balance activities to apparatus, users of Curriculum C polled the greatest increase in the posttest in responses towards comprehensive knowledge.

Component IK - Teacher perceived knowledge regarding partner work in Grade Four work on the theme of balance.

Table 50

Pretest and Posttest Responses to Question 5

Question 5: With respect to the type of apparatus children can use for balance activities, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	1	4	5	
Posttest	1	5	4	
Curriculum B				
Pretest		3	7	
Posttest		3	7	
Curriculum C				
Pretest		6	4	
Posttest		4	6	

Table 51

Pretest and Posttest Responses to Question 12

Question 12: With respect to children applying balance onto apparatus, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	2	7	1	
Posttest	1	4	5	
Curriculum B				
Pretest	2	5	3	
Posttest	1	5	4	
Curriculum C				
Pretest	3	7		
Posttest		8	2	

Question 24 - With respect to the variety of ways that my children can work with a partner, I feel I have . . . (Table 52).

Results - The number of teachers reporting that they have sufficient knowledge about partner work increased in the posttest in all three groups.

	NK	LK	SK	CK	Total
Curriculum A	2	4	4	2	12
Curriculum B	2	2	3	0	7
Curriculum C	6	1	3	2	12

Question 22 - Concerning the educational value of partner work, I feel I have . . . (Table 53).

Results - The number of teachers reporting that they have sufficient or comprehensive knowledge about the value of partner work in the posttest increased in the posttest. A slightly larger increase was noted for the group using Curriculum A.

	NK	LK	SK	CK	Total
Curriculum A	4	2	3	2	11
Curriculum B	0	2	2	0	4
Curriculum C	2	0	0	2	4

Summary of Responses to Component IK

Users of Curriculum A polled the greatest increase in the posttest in responses towards more knowledge regarding partner work.

Component IL - Teacher understanding of the theme of balance in gymnastics at the Grade Four level.

Question 6 - With respect to what is meant by the theme of balance, I feel I have . . . (Table 54).

Results - The number of teachers reporting that they have sufficient knowledge with respect to the meaning of balance increased in the posttest in each group. The groups using Curriculum

Table 52

Pretest and Posttest Responses to Question 24

Question 24: With respect to the variety of ways that my children can work with a partner, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	1	8	1	
Posttest		4	5	1
Curriculum B				
Pretest	1	6	3	
Posttest		4	6	
Curriculum C				
Pretest	3	7		
Posttest		6	3	1

Table 53

Pretest and Posttest Responses to Question 22

Question 22: Concerning the educational value of partner work, I feel I have

	No Knowledge	A Little Knowledge	Sufficient Knowledge	Comprehensive Knowledge
Curriculum A				
Pretest	2	6	2	
Posttest		4	5	1
Curriculum B				
Pretest		5	5	
Posttest		3	7	
Curriculum C				
Pretest	1	5	4	
Posttest		5	4	1

Table 56 (continued)

Components and Questions		Curriculum A					Curriculum B								
	NK	LK	SK	CK	Total	NK	LK	SK	CK	Total	NK	LK	SK	CK	Total
Question 10 Demonstrations (+)	2	1	2	0	5	2	2	3	0	7	-2	4	3	0	5
Component IF Lesson															
Question 23 Organize for Results(+)	2	5	5	2	14	2	0	1	0	3	6	0	3	0	9
Question 2 Questioning(+)	4	5	6	2	17	4	1	3	0	8	4	0	2	0	6
Component IG Class Management															
Question 17 Apparatus and (+) Organization	4	2	3	2	11	2	0	1	0	3	2	3	4	0	9
Question 14 Maximum Activity (+)	4	1	2	2	9	6	-1	2	0	7	4	2	4	0	10
Component IH Evaluation															
Question 3 Process (+)	2	3	3	2	10	4	-1	1	0	4	4	1	2	2	9
Question 16 Variety (+)	6	2	5	0	13	4	-1	1	0	4	8	-3	0	0	5
Component II Observation															
Question 4 What to Observe (+)	4	4	5	2	15	4	-2	0	0	2	2	0	1	0	3
Question 11 Safety (+)	2	0	1	0	3	0	2	1	2	5	2	2	3	0	7

Table 56 (continued)

Components and Questions	Curriculum A NK	LK	SK	CK	Total	Curriculum B NK	LK	SK	CK	Total	Curriculum C NK	LK	SK	CK	Total
Component IJ Apparatus															
Question 5 Types (+)	0	1	-1	0	0	0	0	0	0	0	0	2	2	0	4
Question 12 Applying(+)	2	3	4	0	9	2	0	1	0	3	6	-1	2	0	7
Component IK Partner Work															
Question 24 Variety (+)	2	4	4	2	12	2	2	3	0	7	6	1	3	2	12
Question 22 Value (+)	4	2	3	2	11	0	2	2	0	4	2	0	0	2	4
Component IL Understanding															
Question 6 Meaning (+)	4	4	5	2	15	2	1	2	0	5	0	+5	6	-2	9
Question 21 Other Concepts(+)	6	-2	1	0	5	0	0	0	0	0	-2	0	-1	0	-3

Description of Responses to the In-person Interviews

Through the in-person interviews the researcher attempted to probe further into teachers' use of the curricula. Nine respondents were randomly selected for in-person interviews. This was done to allow the researcher to conduct interviews as soon after implementation as possible. Eighteen questions were developed for users of Curricula A and C, and nineteen questions for users of Curriculum B. The extra questions focused on the particular curriculum used.

Each question was dealt with in three ways. First, under the headings of each question, the results of response counts were recorded under Curricula A, B and C. Special aspects of each response for each curriculum were recorded under Discussion with Teachers. Where relevant remarks occurred, these also were added under Discussion with Teachers. Thirdly, comparisons of responses were made for each curriculum. This was done under "Comparisons". Of the nine teachers interviewed, three used Curricula A, B and C, respectively.

Question 1 - Did you read the curriculum from beginning to end? Or did you read the various components as you needed them?

Curriculum A

Results - The teachers said that they read the curriculum from beginning to end.

Discussion with Teachers - Each teacher indicated that they read the curriculum more than once. Each teacher's method of rereading differed. Following are relevant remarks made by teachers:

"Yes, I read it before teaching, then reread it when I felt it was necessary."

"I read it first, then focused on the components . . . bringing in parts as they were needed."

"Yes, I read it through and am still rereading it."

Curriculum B

Results - Each teacher said that they read the curriculum from beginning to end.

Discussion with Teachers - Each teacher indicated that they referred back to the components after the initial reading when they felt it was necessary. Following are relevant remarks by teachers:

"Yes, I read the curriculum through then referred back to the components. In some cases I wasn't sure where to go after setting down objectives . . . but this cleared up as I used it."

Curriculum C

Results - Each teacher said that they read the curriculum from beginning to end.

Discussion with Teachers - Each teacher indicated that they referred back to the components as they were needed. Following are relevant remarks made by teachers:

"Yes, I read it from beginning to end, then refreshed myself as I went along."

Comparison - No significant differences were noted in responses from teachers using Curricula A, B and C.

Question 2 - Did the curriculum give enough information for you to understand the theme of balance?

Curriculum A

Results - Two teachers replied that there was not enough information. One teacher said that there was.

Discussion with Teachers - Following are relevant remarks made by teachers:

"Yes, the curriculum gave enough information. Without the lessons plans, the explanations in the Foreword and Introduction would need to be expanded and clarified."

"No, not enough (was given) in the lesson plans. I used the glossary to get information."

"No, not enough information was included. I went outside the curriculum to books, cards, films, the Edmonton Public Library. More information was needed . . . however, perhaps I could have made it" (with the curriculum).

Curriculum B

Results - One teacher indicated no. Two teachers indicated yes.

Discussion with Teachers - One teacher indicated that rereading was necessary for clarification. One teacher indicated that after the curriculum had been used, the theme became clearer. Following are relevant remarks made by teachers:

"Not enough material was included. I had to reread the curriculum over more than once in order to teach. There was enough there, I guess, to understand, but more was needed to teach."

"Yes (enough information was included). Once I used it, the ideas became clear.

Curriculum C

Results - Each teacher indicated yes.

Discussion with Teachers - Each teacher indicated that while the theme was understood, more lesson plan material was needed for teaching. Following is a remark made by one teacher:

"Understand, yes, in a global sense. I would have liked more lesson plans; more materials are needed that are practical."

Comparison - All teachers who used Curriculum C, which contained the least amount of material, indicated that there was enough information to understand the theme. Two teachers who used Curriculum A, which contained the greatest amount of and most detailed material, indicated that not enough information was included.

Question 3 - What insights about balance did the curriculum give you that were new to you?

Curriculum A

Results - One teacher indicated that no insights were gained. Two teachers listed insights regarding balance that were new to them.

Discussion with Teachers - Two teachers outlined five insights each regarding balance, such as the variety of balances possible and using benches for balance activities.

Curriculum B

Results - Two teachers indicated that insights were gained, one teacher said none were gained.

Discussion with Teachers - One teacher listed aspects where insights were gained. A second teacher indicated that while no new insights were gained, it was worthwhile to be refreshed regarding aspects of balance. The third teacher indicated that the children's need for balance-type activity was an insight. The general indication was that insight was gained regarding balance. Teachers responded with the following statements:

"It was an insight that you need to teach it; kids' balance skills are terrible."

"I was unsure of what to expect of children in balance, what the possibilities were. I'm not sure of what was expected regarding balance."

Curriculum C

Results - Each teacher listed at least two specific insights gained regarding balance.

Discussion with Teachers - While there were diverse opinions expressed regarding particular insights, each teacher was clear that insight was given. Teacher comments included: how to get a theme across; what sequences are; the amount of improvement that was possible with children and balance, and what types of balances are possible.

Comparison - No significant differences were noted among responses from teachers using Curricula A, B and C. The components which were designed to provide the insights were common in each type of curriculum. The uniformity regarding responses was expected.

Question 4 - Did the curriculum give enough information for you to work effectively with children?

Curriculum A

Results - Two teachers felt that there was enough information. One teacher said that there was not.

Discussion with Teachers - One teacher indicated that the lesson plans gave enough information in two places only: the movement development and teacher suggestions sections. One teacher stated that while there was enough material, more could have been included. The third teacher suggested that since he had to "improvise" at times, not enough information was included in specific areas (e.g. spatial orientation). Each teacher's remarks centered on the lesson plan component, indicating the relative emphasis placed here by the teachers. Following are examples of relevant remarks made by teachers:

"At times there was enough information, yes . . . and at times, no. I wasn't sure at times and needed to improvise. I felt that the lessons were ineffective. The information that was there was sufficient."

"Yes, enough was there to analyze, synthesize and use. More was needed though, I could have used more."

Curriculum B

Results - Two teachers replied that there was enough material, one teacher said there was not.

Discussion with Teachers - One teacher suggested that the initial "structure" provided by the sample lesson plan was a necessary inclusion. The teacher felt no need to go outside the curriculum. Another teacher felt that for "consistently successful lessons", not enough material was included.

Curriculum C

Results - Two teachers replied that there was not enough material, one teacher replied that there was.

Discussion with Teachers - One teacher suggested that the curriculum contained enough information to promote understanding of the theme but not enough to work with children. A second teacher indicated that the one sample lesson plan had to be used for more than one class period. Without the lesson plan, an outside reference would be needed. The teacher who replied yes to the question indicated that the objectives provided the main reference point and that the sample lesson plan was used as a "pattern" for lessons throughout. Following are relevant remarks made by teachers:

" . . . more lesson plans are needed for specific tasks and objectives . . ."

"Yes, used the sample lesson first, then referred to objectives to make the second lesson plan. I referred to the lesson plan for a pattern and was able to use the objectives."

Comparison - Comments of teachers with the lesson plan component of eight lessons centered solely on this component. The importance of the sample lesson plan was evident in the comments made by teachers using Curricula B and C. These teachers developed a variety of implementation schemes in using the materials. One teacher extended the sample lesson plan to encompass more than one class period. Another teacher was comfortable in fitting each objective into the sample lesson plan format, writing out lesson plans which followed the initial format. The majority of teachers who used Curricula A and B indicated enough information was available. These curricula contained the greatest and next greatest amounts of information respectively. The majority of teachers who used Curriculum C, which contained the least amount of information, indicated that not enough information was available.

Question 5 - What insights about working with children did the curriculum give you?

Curriculum A

Results - Two teachers replied that no insights were gained. One teacher replied that "very few insights" were gained from the curricula.

Discussion with Teachers - One teacher indicated that while no insights were gained from reading the curriculum, many were gained from using it. One teacher's insights included: discovery that "pacing" of the lessons had to be slower, that balance is difficult to teach and that exploration has a "place" in gymnastics. Another teacher felt that research into growth and development needed to be applied to the curriculum.

Curriculum B

Results - Each teacher suggested that insights were gained and were able to outline particular ones.

Discussion with Teachers - Comments centered on two areas: insights into gymnastics and balance and insights into curriculum. Components regarding the former included: exploration of possibilities regarding balance and children's need for structure and guidelines. Comments regarding curriculum included: the value of having objectives stated specifically and behaviourally, and the value of including large amounts of material in curricula. Following are relevant comments made by teachers:

"I didn't think that you had to give (a curriculum) that much information."

"The children's partner work surprised me. They came to an understanding of balance and produced better routines when doing partner work. I'd not done partner work in gymnastics before this."

Curriculum C

Results - Two teachers outlined particular insights gained regarding working with children. One teacher said that no insights were gained.

Discussion with Teachers - One teacher said that children need specific direction and guidelines regarding types of balance. The implication is the need for written materials to specify a great variety of types of tasks regarding a theme. Another teacher replied that it was an insight that children could enjoy balance activities and learn about balance.

Comparison - Opinion was divided among the three groups regarding insights gained. Some general comments appeared in each group. These concerned the need for specificity and structure in presenting theme material, and the value of a time of exploration. The type of curricula used did not appear to cause a significant trend in replies regarding whether insight was gained or not.

Question 6 - Did your feelings toward the curriculum change through the four weeks? How?

Curriculum A

Results - Two teachers stated that their feelings became more negative. One teacher stated that her feelings became more positive.

Discussion with Teachers - Teachers whose feelings became negative listed the following reasons: length of lesson plans, lack of clarity and conciseness of lesson plans which made them difficult to work with, disagreement with procedure outlined regarding having both floor and apparatus work each class, lack of detail regarding children's growth, development reactions, and movement potential. Following are relevant remarks made by the teachers:

"The lessons were just too long."

"There was confusion with the lessons with large apparatus. I'd prefer to teach all floor work first . . . then introduce equipment."

". . . more was needed about children, how they would have reacted, their vocabulary level, their comprehension. . . ."

Curriculum B

Results - Two teachers stated that their feelings improved. One teacher stated that her feelings did not change.

Discussion with Teachers - Two teachers suggested that it was during use of the curriculum that their feelings improved. This was due to familiarity with terms and increased expectancy of success regarding implementation. The third teacher felt the same about the curriculum, but indicated that her feelings toward gymnastics improved.

Curriculum C

Results - Each teacher stated that their feelings toward the curriculum improved.

Discussion with Teachers - Two teachers said reading of the curriculum resulted in negative feelings. Both attributed this to an "apparent" lack of practical teaching ideas. One teacher felt that the curriculum was hard to follow. Two teachers said that their feelings became more positive as they worked with the curriculum, though both suggested that more "specificity" and greater amounts of teaching ideas would be valuable.

Comparison - Generally, feelings toward the curricula improved or stayed the same for teachers who used Curricula B and C. These curricula contained the least amounts of information. Feelings became more negative for two of the three teachers who used Curriculum A.

Question 7 - If I were to give this package of materials to another teacher, what do you think should change?

Curriculum A

Results - Each teacher felt changes should be made. Suggestions for change focused solely on additions.

Discussion with Teachers - Two components received the majority of comments. Teachers indicated that the lesson plans should be shortened and simplified. One teacher suggested an extension of each lesson plan to two or three lesson plans. Second, each teacher felt videotapes, visual aids and accompanying written resources would augment the curricula. Widely diverse opinions were expressed in other areas. Following are relevant remarks made by teachers:

"Alternatives should be provided in the curriculum when some things like apparatus are not available."

" . . . a more detailed outline on how to reach objectives is needed."

Curriculum B

Results - Each teacher indicated that changes should be made. Suggestions from two teachers focused solely on additions. One teacher suggested deletion of a component.

Discussion with Teachers - Two teachers suggested the addition of lesson plans. One teacher suggested a second lesson plan designed for apparatus work only would complete the curriculum. This teacher suggested that a "number of lesson plans" should be added. Each lesson plan could focus on developing one aspect of gymnastics, such as apparatus use and routine development. A third teacher suggested that more "structure" is needed, though not necessarily in the form of lesson plans. Here, objectives should be outlined with teaching suggestions and tasks listed below each. This teacher also suggested addition of expectations for the teacher of what might happen regarding children's performance in gymnastics. This would provide a "picture" of what gymnastics actions are possible. One teacher indicated that the information in the Foreword and Introduction components should be deleted.

Curriculum C

Results - Each teacher suggested that a number of changes should be made to the curriculum. All changes sugested were additions.

Discussion with Teachers - Two teachers suggested that a series of lesson plans should be added. Both felt the curriculum should contain more "practical" ideas. One teacher felt that physical education was a low priority, therefore less background information in the components like the Foreword and more "activity" sections should be added. One teacher felt that greater specification regarding time for completing objectives should be added, along with ideas for lesson plan development. Two teachers felt that videotapes and films should be added, along with suggestions to improve aesthetics and quality of balance work.

Comparison - Teachers who used Curriculum A had the greatest number of suggestions for changes, followed by teachers who used Curriculum C. Teachers who used Curriculum B had the least number of suggestions for change and appeared the most satisfied of each group with their curriculum. Comments covered a breadth of areas. Two areas of suggestions appeared in every group. One concerned increasing the detail given teachers for lesson planning. A second concerned the addition of extra resources such as illustrations, videotapes or films to the curriculum.

Question 8 - Would you have preferred to use this material over a different time span?

Curriculum A

Results - Each teacher indicated a dissatisfaction with the implementation period of two classes per week for four weeks. Each teacher suggested an alternate time span.

Discussion with Teachers - Two teachers said winter or spring would be a more appropriate time for gymnastics. One teacher preferred a unit approach of successive gymnastics lessons, rather than alternating gymnastics lessons with other dimensions. Two teachers preferred alternating lessons. Each teacher felt that at least ten class periods would be required. Each teacher said that this would be necessary for "quality" work to be completed. One teacher felt that a thirty minute lesson was inadequate. One hour class periods are needed. Following is a relevant remark made by a teacher:

"This unit should be taught in ten lessons in spring when children are more familiar with vocabulary and movement."

Curriculum B

Results - Each teacher indicated that they would have preferred to use this material over a different time span.

Discussion with Teachers - Two teachers felt that at least three class periods per week were required to ensure continuity. One teacher felt that two class periods per week were sufficient. She suggested that five weeks were needed for comprehensive coverage of balance. One teacher felt that more written instructions were needed regarding use of the material over a variety of time periods. Each teacher felt that quality work was not evident after four weeks of eight lessons, hence more time was needed. Suggestions ranged from longer class periods to more classes per week.

Curriculum C

Results - Two teachers indicated satisfaction with the time. One teacher said more time per class was needed.

Discussion with Teachers - One teacher felt "pushed" for class time, particularly when classes involved observation and demonstration of routines. This teacher suggested equipment should be set up prior to class by students.

Comparison - All teachers were scheduled for thirty minute class periods. The time span suggested for implementation was eight classes over a four week period, with two classes taught per week. Generally, all teachers expressed some dissatisfaction with the time period of thirty minutes. Estimates of actual teaching time ranged from thirty minutes to below twenty minutes. No accurate measurements were expected by teachers. Teachers estimated that gymnastics loses more time than other dimensions. Generally, most teachers in each group felt that more classes per week and a longer period than four weeks should be used. There were exceptions to this with one teacher who used Curriculum C expressing satisfaction with the time span. Over all, the least satisfied group used Curriculum A with the lesson plans. The most satisfied group used Curriculum C, which contained the least amount of detailed information.

Question 9 - Have your attitudes changed toward gymnastics? How?

Curriculum A

Results - Two teachers said their attitudes had improved. A third teacher said that her attitude had become more negative.

Discussion with Teachers - One teacher attributed her negative attitude to her perception that each lesson plan contained too much material. This resulted in confusion over implementation procedures. One teacher felt that she had learned more about teaching in "a general sense". She expressed satisfaction in the reactions of her children and saw a carry-over of children's positive attitudes into other subjects. She indicated this influenced her own attitude. Following are relevant remarks made by teachers:

"With detailed lessons, I can handle gymnastics. It's more difficult than it appears, particularly the sequences and routines."

"I have learned more, stretched out . . . grown. . . ."

Curriculum B

Results - All teachers said that their attitudes improved.

Discussion with Teachers - Each teacher stated that they became more confident as they used the curriculum. One teacher stated that her attitudes toward safety improved. Another suggested that her attitude improved because her children experienced "enjoyment and success" with the activities. Following are relevant comments made by teachers:

"The movement education concept, teaching this way, was new to me and I found it a good way of teaching."

"Yes, my attitudes improved as I watched my children enjoy it (gymnastics) and be able to do it (balance)."

Curriculum C

Results - Two teachers said their attitudes became more positive, one teacher said that her attitudes had not changed towards gymnastics.

Discussion with Teachers - One teacher said that she became more confident "by using" the curriculum. Another teacher said that he found teaching gymnastics not as difficult as he first thought. The third teacher felt that teaching physical education was difficult and use of the curriculum had not caused a change in this attitude. Following is a relevant remark made by one teacher:

"It would be helpful to have objectives with a sequential progression of activities. I would be more comfortable a second time around, but I would need to internalize a lesson prior to teaching it."

Comparison - All teachers interviewed who used Curriculum B stated their attitudes improved. Two teachers interviewed who used either Curriculum A or C stated their attitudes improved. One teacher in both groups said their attitudes became more negative or stayed the same. Common reactions in all groups concerned the enjoyment and success of children and the influence this had on their own attitudes. In addition, most teachers in each group referred to their improved confidence. They stated that they did not feel sure about teaching gymnastics initially from the curricula. Some reasons given included safety concerns, lack of knowledge regarding movement education and a belief that balance-type activities would be interesting for children.

Question 10 - Which component(s) did you use the most? Why were these useful to you?

Curriculum A

Results - Each teacher listed three components as used most. No component appeared more than once in teacher responses.

Discussion with Teachers - One teacher said that the Lesson Plan component, Definition component and Evaluation component were most useful. A second teacher said that the Child and Balance component, the Component of Balance component and Partner Work and Balance component were most useful. The third teacher said that the components found in the Foreword were most useful, followed by the Apparatus Work component. Following are relevant remarks made by one teacher:

"I found the other components more useful than the lesson plans because I like to make my own lesson plans. I would like someone else's lessons to refer to only . . . someone else's words are not my words."

"My lessons are for my children, they need my personal style and lesson plans don't fit into my style."

Curriculum B

Results - Each teacher interviewed said that they used the component entitled Instructional Objectives for the theme of balance most.

Discussion with Teachers - One teacher said that following the Instructional Objective component, the Definition component and Development of the

	Theme Material component were most useful. Two teachers said that the Sample Lesson Plan component was the most useful.
Curriculum C	
Results	- Each teacher interviewed listed a different component as being used the most: the Sample Lesson Plan component, the Instructional Objectives for the Theme of Balance component and the Components of Balance component.
Discussion with Teachers	- One teacher used the Sample Lesson Plan component the most because he was "most familiar" with this type of format. He stated that Instructional Objectives and Goals were new to him in physical education and were used for references only. A second teacher said that after the component called The Components of Balance, he used the components entitled Purpose and Place of Balance and Development of Theme Material. He used the Sample Lesson Plan component initially and did not refer to it after week two. A third teacher said that the Instructional Objectives component was the "key" to the curriculum and used this component and the Sample Lesson Plan component almost exclusively.
Comparison	- Generally, teachers who had the lesson plans did not feel they were useful. All teachers

who used Curriculum B were unanimous in stating they used the Instructional Objectives for the Theme of Balance component most. This component appeared most often. The Sample Lesson Plan component appeared the next number of times among all teachers.

Question 11 - Which component(s) did you use the least? Why were these components less useful?

Curriculum A

Results - Two teachers said that "most" of the components in the Foreword and Introduction were used the least. One teacher said that one particular component, Apparatus Work and Balance, was used the least.

Discussion with Teachers - Teachers were generally non-specific in their responses to this question. Each teacher indicated that the Foreword and Introduction sections included components which were read, but not used in designing lesson plans.

Curriculum B

Results - Each teacher said that the evaluation was used least.

Discussion with Teachers - One teacher suggested that more information was needed to use the evaluation. Only one teacher indicated that components in the Foreword and Introduction sections were used least.

Curriculum C

Results - Two teachers said that all components were useful and were used equally. One teacher said that the Evaluation component and Definition component were used least.

Discussion with Teachers - One teacher said that all components were useful because "all were needed" and were integral to the curriculum implementation.

Comparison - Teachers who used Curriculum A listed the greatest number of components used the least. They indicated a reliance on the component containing the lesson plans. The Evaluation component was used least by more teachers than any other component. All teachers who used Curriculum B used this component the least. Teachers who used Curriculum C not only listed the fewest components, but gave strong indications that they needed to use all components.

Question 12 - Were there components which held you back or inhibited you?

Curriculum A

Results - One teacher said there were no inhibiting components. Two teachers said that the Apparatus component(s) inhibited them.

Discussion with Teachers - One teacher stated that the Apparatus component(s) inhibited her intially, but the degree of inhibition decreased as she went along. She suggested greater specification on use of apparatus was needed. A second teacher said she was uncomfortable with the time breakdown regarding floor work and apparatus. (The curriculum suggested that floor work and apparatus work be used in every lesson where possible). She indicated that this inhibited her until she used an alternate time breakdown that she was comfortable with.

Curriculum B

Results - Two teachers said that there were no inhibiting components. One teacher said that the Evaluation component inhibited her.

Discussion with Teachers - One teacher said that the Evaluation component was too "onerous and unworkable" and consequently was not used. She also suggested that the component called The Unit Theme Material needed specification, tying the material directly into the appropriate instructional objective.

Curriculum C

Results - Each teacher interviewed stated there were no inhibiting components.

Comparison - Teachers who used Curriculum A listed the greatest number and variety of inhibiting components. Teachers who used Curriculum C did not list any inhibiting components.

Question 13 - Would you have appreciated more material in any one component?

Curriculum A

Results - One teacher said no. Two teachers listed two components which they felt required more material.

Discussion with Teachers - One teacher said that transparencies, pictures or illustrations should be included. She felt records or films could be made available to help promote the "dramatic" side of gymnastics. A second teacher felt that specificity regarding the kinds of gymnastics actions children should be able to do should be included.

Curriculum B

Results - One teacher suggested that no more material need be added. A second teacher said that lesson plans should be included. A third teacher said that questioning strategies outlined in the component called The Unit Theme Material should be tied directly into the instructional objectives.

Discussion with Teachers - One teacher felt that greater specificity regarding what can be expected regarding gymnastics work should be included.

Curriculum C

Results - Two teachers said that lesson plans should be included. One teacher felt that no material should be added.

Discussion with Teachers - One teacher felt that lesson plans could be included. She felt that the next most "attractive" addition would be lesson plan "ideas" which would include teaching suggestions regarding implementation of objectives and setting up of apparatus.

Comparison - Teacher comments from users of Curriculum A focused on increases, detail, specificity and illustrations. Teachers who used Curriculum C indicated the desire for more lesson plans. Teachers who used Curriculum B seemed to want more detail regarding how to implement the instructional objectives. All comments reflected the type of curriculum used.

Question 15 - Would you have wanted to be involved in the development of these materials?

Curriculum A

Results - Two teachers said no. One teacher said yes.

Discussion with Teachers - One teacher described her possible involvement as "giving advice" during development. Another teacher felt that involvement would have provided insights into gymnastics. She would have preferred to develop the Lesson Plan component. Each teacher felt that time would be the significant factor influencing involvement in any curriculum development.

Curriculum B

Results - Each teacher interviewed said yes.

Discussion with Teachers - Comments from teachers generally focused on the potential for understanding more about gymnastics from possible involvement in material development. Following is a relevant remark made by a teacher:
"Objectives can be interpreted differently. To be involved in curriculum development helps teachers use objectives."

Curriculum C

Results - Two teachers said yes. One teacher said no.

Discussion with Teachers - Each teacher said that their involvement would depend upon the time available to them.

Comparison - Lack of time and the potential for greater understanding were the most prevalent reactions to this question. More users of Curriculum B than either Curricula A or C would have wanted to be involved in development.

Question 15 - Which components would you have preferred to develop yourself?

Curriculum A

Results - Each teacher interviewed said the Lesson Plan component.

Discussion with Teachers - One teacher said that ideas for safety for use of apparatus could be developed into the lesson plans.

Curriculum B

Results - One teacher said the Foreword and Introduction sections. A second teacher said the Instructional Objectives Component. A third teacher said that she would not have wanted to develop a component.

Discussion with Teachers - One teacher said that she would have given input into a component while someone was developing it. She stated:

"I would read into it something that isn't there, from my own experience and from my own situation. For example, with apparatus and how to store and arrange it into cupboards."

Curriculum C

Results - Two teachers said lesson plans. One teacher said teaching suggestions regarding use of apparatus.

Discussion with Teachers - Generally, teachers would have preferred to develop components that did not appear in their curriculum. They referred to lesson plans and teaching suggestions.

Comparison - The type of component which appeared most often in comments was lesson plans. The only group which did not mention lesson plans were the users of Curriculum B.

Question(s) 16 - How useful were the lesson plans? (Curriculum A).
How useful was the theme material? (Curriculum B).
How useful was the material I gave you? (Curriculum C).

Curriculum A

Results - One teacher said very useful, two teachers said fairly useful.

Discussion with Teachers - Generally, two teachers felt that each lesson plan was too long. The lesson plans were useful as guidelines for these teachers.

Curriculum B

Results - Two teachers said very useful, one teacher said fairly useful.

Discussion with Teachers - One teacher felt that the usefulness of the materials would have been increased if the theme material had been arranged under the appropriate instructional objective.

Curriculum C

Results - Each teacher interviewed said that the material was fairly useful.

Discussion with Teachers - One teacher said she "relied" on it and referred to various components as she needed them because she had "no other sources to refer to." Another teacher felt that the material was useful in an "academic" sense. It increased his knowledge about balance and gymnastics, but was of limited use in teaching balance activities.

Comparison - Curriculum B was judged useful by the greater majority of its users. Curriculum C was judged fairly useful by the greater majority of its users.

Question(s) 17 - Would you have preferred to develop your own lesson plans? (Curriculum A).

Would you have preferred to develop your own theme material? (Curriculum B).

Curriculum A

Results - Two teachers said yes. One teacher said no.

Discussion with Teachers - One teacher said the lesson plans were good, but she would have found her own lesson plans "more useful" to her and to her children. Another teacher said that if given instructional objectives and teaching suggestions, she would have preferred to develop her own lesson plans. A third teacher felt the lesson plans served as guidelines and could be used in place of her own lesson plans.

Curriculum B

Results - Each teacher interviewed said no.

Discussion with Teachers - Teachers indicated they felt they lacked sufficient knowledge regarding gymnastics and balance to be able to develop their own theme material.

Comparison - Most teachers who used Curriculum A preferred to develop their own lesson plans. No users of Curriculum B preferred to develop their own theme material.

Question(s) 18 - Could you have planned your own lesson plans on the basis of the other materials I gave you? (Curriculum A).

Were you able to plan your own lessons on the basis of the theme material? (Curriculum B).

Were you able to plan your own lessons on the basis of the material I gave you? (Curriculum C).

Curriculum A

Results - Two teachers said yes and one teacher said no.

Discussion with Teachers - One teacher said that her own lessons would be "very poor" so lesson plans should be kept as a resource. Following is a relevant remark made by this teacher:

"I did not follow the lesson plans at the end of the period. I formulated my own lesson plans and referred to the lesson plans in the curriculum."

Curriculum B

Results - Each teacher interviewed said yes.

Discussion with Teachers - Each teacher interviewed said that they were able to develop their own lesson plans only by following the model provided by the sample lesson plan. Each teacher said that their lessons were adequate at first and improved as time went on. On teacher said:

"I would have preferred an inservice after having used the materials. I would have been able then to develop better lessons, I'm sure."

Curriculum C

Results - Two teachers said yes. One teacher said no.

Discussion with Teachers - Two teachers felt that their lessons were not as good as they might have been as if they had had lesson plans to follow. One teacher said she was only able to plan lessons by going to "outside" materials.

Comparison - Teachers who used Curricula B and C generally felt less pleased with their lessons than teachers who used Curriculum A.

Question 19 - Would you have preferred that I had given you a series of lesson plans? (Curriculum B and Curriculum C).

Curriculum B

Results - Each teacher said yes.

Discussion with Teachers - One teacher would have preferred lesson plans to go along with the theme material. She preferred the "freedom" to develop her own lesson plans and would use a series of lesson plans as "reference points". A second teacher said that initially, yes, however, she felt lesson plans would have eventually become "restrictive". A third teacher would have preferred lesson plans only if given the "freedom" to modify them. She would have used a series of lesson plans as "guidelines".

Curriculum C

Results - Each teacher interviewed said yes.

Discussion with Teachers - One teacher would have preferred lesson plans to refer to, not to use "prescriptively". A second teacher would have preferred a lesson plan "guideline" into which he could have developed the theme material. A third teacher said she would have preferred lesson plans for this particular subject only, a 'non-specialty' for her.

Comparison - All teachers interviewed in both groups would have preferred lesson plans. Generally, teachers preferred lesson plans to be used as guidelines or reference points and not as a prescriptive plan of action. Generally, teachers who used Curriculum C would have preferred lesson plans (Curriculum A) over theme material (Curriculum B).

Description of Responses to the Telephone Interviews

Through the telephone interviews the researcher attempted to probe into teachers' use of their selected curricula. Four questions were developed for each teacher's interview.

Each question was dealt with in three ways. First, under the headings of each question, the results of response counts were recorded under Curriculum A, Curriculum B, and Curriculum C. Special aspects of each response for each curricula were recorded under Discussion with Teachers. Where relevant remarks occurred, these were added under Discussion with Teachers. Thirdly, comparisons of responses were made for each curricula. This was done under Comparisons. Twenty-one teachers were interviewed, seven users of Curricula A, B and C respectively.

Question 1 - Which component did you use the most? Why were these most useful to you?

Curriculum A

Results - Each teacher interviewed said the lesson plans were used the most.

Discussion with Teachers - Following are relevant remarks made by teachers:

"I did not use the actual words. I used the ideas from the curriculum and my own key words."

"There was too much in one lesson. I reviewed the previous lesson and ended up with everyone doing the same thing."

"The lesson plans were valuable to get at the

	objectives that were set out." "The plans were very prescriptive, and I never followed them verbatim. I changed them according to what the children were doing and relied on my past teaching experience to deal with problems that were not specified in the lesson plans."
Curriculum B	
Results	- Four teachers said they used the Instructional Objective component most. Three teachers said they used the Sample Lesson Plan component most.
Discussion with Teachers	- The Instructional Objective component was mentioned six times by teachers. The Sample Lesson Plan was mentioned four times. The Definitions were mentioned three times. The Development of Theme component was mentioned twice as was the Evaluation component.
Curriculum C	
Results	- Four teachers said they used the Sample Lesson Plan most. Three teachers said they used the Instructional Objective component.
Discussion with Teachers	- The Sample Lesson Plan component was mentioned seven times. The Instructional Objective component and Definition component were mentioned twice.
Comparison	- The Lesson Plan component (Curriculum A) and

the Sample Lesson Plan (Curricula B and C) were mentioned more times by teachers than any other component. The Instructional Objective component was mentioned most often. This component was mentioned more often by users of Curriculum B and Curriculum C than users of Curriculum A.

Question 2 - Which components did you use the least? Why were these less useful to you?

Curriculum A

Results - The components in the Introduction section were mentioned three times. The components in the Foreword section were mentioned twice, as was the Evaluation component. One teacher said the Apparatus Work and Balance component.

Discussion with Teachers - Five teachers said they read the components in the Foreword and Introduction sections and did not refer back to them. They indicated that they used the lesson plans almost exclusively. Two teachers did not use the Evaluation component because of "time constraints". One teacher said that apparatus was not available in the school and as a result, she did not do apparatus activities.

Curriculum B

Results - The components in the Introduction and

Foreword sections were each mentioned three times. The Evaluation component was mentioned twice and the Apparatus Work and Balance component were mentioned once.

Discussion with Teachers

- One teacher said the language used in the Foreword made the components here difficult to use. A second teacher said that time constraints prevented use of the Evaluation component. The Foreword and Introduction components received the greatest number of responses.

Curriculum C

Results

- The components in the Introduction and Foreword sections were mentioned three times. The Evaluation component was mentioned twice. Two teachers said they used all the components equally.

Discussion with Teachers

- Following are relevant remarks made by teachers:

  "I used all the components . . . I felt I needed to in order to teach the theme properly."

  "The evaluation was too cumbersome to be used effectively. . . ."

Comparison

- The Foreword and Introduction sections and the components in these sections were mentioned most often among each group. The Evaluation

	component was most often mentioned.
Question 3	- If I were to give this package of materials to another teacher, what do you think should change?
Curriculum A	
Results	- The majority of responses concerned shortening the lesson plans.
Discussion with Teachers	- Following are relevant remarks made by teachers: "Diagrams and visual materials are needed. . . ." "I would like to have had an inservice during the use of these materials." "I like simpler lesson plans, less prescriptive types . . . because of my experience. . . ." " . . . suggestions for secondary or alternative materials would be nice. Signs or posters around the gym can also be used to remind children of the possibilities." " . . . more time on a lesson for gymnastics, probably at least forty minutes. . . ."
Curriculum B	
Results	- The majority of responses concerned the addition of lesson plan type of materials.
Discussion with Teachers	- Following are relevant remarks made by teachers: " . . . confusing not knowing what

expectations are for balance and children. One view of balance progression from kindergarten to grade six would be great for a teacher to know where grade four children fit in."

"The curriculum was good professionally and for understanding, but not for teaching."

"This curriculum would be better if ideas were laid out under objectives. . . ."

"More explicitness would have been useful. Specific ideas for sequences and routines . . . diagrammed out of types of sequences would be valuable. Videotapes would be good so I can see and children can see their work."

"An overview of how to use the curriculum document would have been helpful."

"Children lack variety . . . a videotape would help break down their mind set."

"I prefer to go to apparatus work and remain there . . . not going back to floor work."

"Background information should go to the end of the book, like an index, so teachers can get to the teaching ideas."

Curriculum C

Results - The majority of responses concerned the addition of lesson plan types of materials.

Discussion with Teachers - Following are relevant remarks made by teachers:

"I had difficulty in interpreting the objectives. If the theme material were organized under objectives, this would help."

" . . . lots of ideas to begin with, prescriptive at first. These lessons would be used as a guide for objective attainment. . . ."

" . . . list of materials, loosely arranged with a lesson plan as a guide. . . ."

" . . . a change on how to use apparatus . . . one lesson on the floor and one lesson on apparatus."

" . . . more lesson plan ideas, but not necessarily specific lesson plans, although I'd use them."

Comparison - Most teachers preferred to see lesson plan types of materials. Few teachers wanted prescriptive plans, preferring instead to have material arranged under objectives so teachers must develop their own lesson plans. Lesson plans seemed to be viewed as valuable as guidelines for format purposes or as reference points.

Question(s) 4 - How useful were the lesson plans? (Curriculum A).

How useful was the theme material?

(Curriculum B).

How useful was the material that I gave you? (Curriculum C).

Curriculum A

Results - Five teachers said very useful. One teacher said fairly useful and one teacher said not useful at all.

Discussion with Teachers - Teachers generally felt that the lesson plans were very useful for non-specialist or beginning teachers. Three teachers indicated that they would not use lesson plans exclusively throughout the year, preferring to adapt and add material in other formats from other sources. Most teachers said that they did not use the plans prescriptively. They picked ideas from the plans and used the format of the plans as a guideline. Two teachers said some procedures outlined in the plans, such as apparatus use, were incompatible with procedures they were comfortable with. They used systems they had the greatest experience with in place of the system(s) outlined in the curriculum.

Curriculum B

Results - Two teachers said very useful. Four teachers said fairly useful. One teacher said they were not useful at all.

Discussion with Teachers

- Two teachers said that the usefulness of the materials lay in the knowledge they provided about balance. As teaching "tools", they were "fairly useful". One teacher felt that this "type" of material was useful for an experienced teacher. She said that this material "forced her to work harder" than she would have if she had had lesson plans.

Curriculum C

Results

- One teacher said very useful. Three teachers said fairly useful. Three teachers indicated that the materials were of "limited practical use".

Discussion with Teachers

- The majority of teachers indicated that lesson plan types of materials would be more useful. The general feeling was that it would not matter if the plans were prescriptive or not, that teachers would adapt and modify plans where necessary. Two teachers said that the materials were useful mainly for providing knowledge. One teacher felt that the materials began to lack "utility" towards the end of the implementation period. All teachers indicated that the sample lesson plan was an important and necessary part of the curriculum. All teachers suggested that for non-specialists, this "type" of material was difficult to use, and more detail (lesson plan type of materials) would have been preferred.

Comparison - The lesson plans were found most useful by five of the teachers. Only two teachers felt their theme material was most useful, and one teacher the material in Curriculum C. Generally, Curriculum A was perceived as more useful for its users than were Curricula B or C.

Chapter 5

DISCUSSION OF THE FINDINGS, CONCLUSIONS, SUMMARY AND RECOMMENDATIONS

Introduction

The basic difference among the three designs of curricula was their degree of specificity. One design was very detailed and specific with eight progressive lesson plans included as the curriculum's unique component. The second design chosen was somewhat less specific. Here, selected teaching material was outlined in one component in a list-type format under selected headings of floor work, apparatus work and teacher suggestions. The third design was the least specific of the three curricular designs used in this study. The common elements found in the previous two curricula which provided teaching material designed with different degrees of specificity were missing in this curriculum. Teachers' implementation strategies were largely determined by their use of the remaining components in this curriculum.

This chapter presents a summary of the study with attention drawn to the major findings. The findings are not totally definitive because of the small sample. These findings have been summarized under the headings of attitudes and perceived knowledge. The pertinent findings gathered in the interviews have been summarized and appear under the same headings. A discussion of the findings has been included in each section. These are speculative in nature, based largely on readings and personal observations. The conclusions which have been drawn from the findings have been included. This chapter also contains recommendations for further study in curriculum development and in elementary school gymnastics.

Discussion of the Findings

Attitudes

Curriculum A

The teachers who used Curriculum A showed the greatest improvement among the three groups in attitudes in the posttest in the greatest number of attitude questions and components as shown in Table 32. These included: attitudes toward the problem-solving approach, attitudes toward the educational contributions of gymnastics, attitudes toward being recipients of preplanned curricula, attitudes toward the sources of curriculum materials, attitudes toward their perceived state of competence, attitudes toward their perceived success of implementation and attitudes toward the skills achieved by children in balance. This group was the least concerned in the posttest towards the perceived constraints and difficulties associated with gymnastics.

The teachers who used Curriculum A showed the greatest improvement in attitudes in the greatest number of components. This might be attributed to the following:

1. The lesson plan type of curriculum continues to be highly prevalent and available to teachers for their use in gymnastics. The result is a familiarity with this particular type of curriculum and experience in utilizing it for teaching.

The group using Curriculum A generally became the most positive in questions concerning attitude to curriculum (e.g. I am able to teach gymnastics from someone else's preplanned curriculum; there is a lack of useful curriculum materials for teacher use). However, while this was true after implementation for this group, the group using Curriculum C was more positive in curriculum-related questions before implementation, and showed the least amount of movement towards a positive attitude towards curriculum after implementation. This seemed to indicate that the pervasive influence of lesson plan type of curriculum was felt in this study. This group was generally more appreciative initially and stayed that way after implementation. The interviews revealed an interesting aspect regarding how teacher attitudes were affected. Where positive shifts in attitudes were reported, the teachers indicated the influential factor was the actual working with the curriculum. These teachers reported that becoming more familiar with their curricula through using it and watching the progress and enjoyment of children were aspects which caused an increasingly positive attitude to develop.

2. The majority of teachers in this study seemed to expect lesson plans like those provided in Curriculum A. Thus teachers who used Curriculum B and two teachers who used Curriculum C expressed an initial disappointment with the type of curriculum they received. The anonymous nature of the questionnaires unfortunately prevented a follow-through with these teachers to see if their attitudes changed after implementation.
3. The group using Curriculum A may have implemented their

curriculum more intently and prescriptively than the other groups because of their experience with this type of curriculum. As a result, they may have been able to draw more reactions and conclusions. This level of implementation may have affected this group's move towards positive attitudes in the relatively large number of components.

Curriculum B

The teachers who used Curriculum B showed the greatest improvement among the three groups in attitudes in the posttest in the next greatest number of attitude components as shown in Table 31. These included: attitudes toward their perceived state of competence, attitudes towards the various formats of available curriculum, and teacher attitudes toward understanding the objectives in elementary school gymnastics.

These teachers ranked second in improved attitudes and also in the number of components. This might be attributed to the following reasons:

1. Teachers were generally unfamiliar with curriculum designed with this type of detail and specification. However, they were able to use this curriculum as a base for planning lessons.
2. Teachers expected to receive a more prescriptive type of curriculum, and used a variety of implementation strategies.
3. The absence of written guidelines on how to develop the instructional objectives over a number of lessons might have stimulated this variety of implementation strategies.

Curriculum C

The teachers who used Curriculum C showed slightly less improvement in attitudes in the attitude components in the other groups. In addition, this group had undecided responses for more questions in more components in the posttest than either group using Curriculum A or Curriculum C.

The teachers who used Curriculum C became more negative in the posttest about the problem-solving approach used to teach gymnastics, about the enjoyment children derive from gymnastics, and about being recipients of preplanned curriculum. In questions where improvement was noted in the posttest in selected questions, the amount of improvement for this group was found to be somewhat less than for the other two groups. The above findings might be attributed to the same reasons expressed for the group using Curriculum B:

1. Teachers were unfamiliar with curriculum designed in this way.
2. The expectations of teachers of receiving a more prescriptive type of curriculum. This group showed an expected move towards agreement in the statement "I am personally quite able to decide what to teach in gymnastics". They apparently had to make the largest number of curriculum implementation decisions because of their least prescriptive curriculum.
3. An initially high number of teachers in this group as compared to teachers in the other groups who responded positively in the pretest in selected questions. The improvement in attitudes appears relatively small as a result.

Perceived Knowledge

Curriculum A

The teachers who used Curriculum A showed gains in perceived knowledge in the posttest in the greatest number of questions and components as shown in Table 56. These included: perceived knowledge regarding curriculum materials, aims for balance work, selecting content for the theme of balance, teaching methods, organizing a lesson, evaluation, observation for improving teaching, applying balance activities to apparatus, partner work and understanding the theme of balance.

That the teachers who used Curriculum A showed the greatest gains towards comprehensive knowledge in the greatest number of components might be attributed to the following reasons:

1. The greater level of commitment to the materials because of familiarity with lesson plans as a curricular resource and also experience in utilizing this type of curriculum.
2. A greater involvement with the curriculum because of the prescriptive nature of the lesson plans and the possible greater degree of intensity of implementation which resulted.

Curriculum B

The teachers who used Curriculum B showed gains in perceived knowledge in the posttest in one component: regarding teaching methods. This group ranked second in posttest to users of Curriculum A in the amount of overall improvement in knowledge in all components.

That these teachers showed improvement in fewer components than users of Curriculum A might be attributed to the following reason:

1. A suspected lower level of both initial and ongoing commitment to a type of curriculum with which teachers were less familiar.

Each curriculum contained identical background material designed to give information to aid teachers' understanding of gymnastics and development of balance. It was interesting to note that the groups using Curriculum B and Curriculum C did not show greater gains than they did in knowledge components, given their obvious need to rely more heavily on the background information than the group using Curriculum A.

Curriculum C

Teachers who used Curriculum C showed gains in perceived knowledge in components regarding: the class management aspects of achieving maximum pupil activity and organization of children. This group showed the least amount of overall gain in the posttest towards increased knowledge in all components. That this group showed the least amount of gain might be attributed to the following reason:

1. A possible lower level of both initial and ongoing commitment to an unfamiliar design of curriculum.

Curriculum Design

Curriculum A

Two of the three teachers interviewed said that their feelings became more negative during implementation. Among reasons offered were the length of particular lesson plans and subsequent implementation adjustments (e.g. having to complete one lesson plan over two or three lessons). A general dissatisfaction by all interviewees in each group was expressed regarding each curriculum's ability to show teachers how to bring about objectives. However, the interviewees who used Curriculum A were less negative in this regard than interviewees who used Curriculum B or Curriculum C, possibly due to a general familiarity with lesson plan design.

The users of Curriculum A relied predominantly on the lesson plan component. This contrasted with the other groups who relied on a greater variety of components of their particular curriculum. The users of Curriculum A indicated that insights about the theme of balance were gained more so from using their curriculum than from reading it. They seemed to be more positive about their curriculum as a teaching device than were users of Curriculum B or Curriculum C and listed more insights gained about the theme of balance than the other groups.

The largest amount of dissatisfaction regarding the actual implementation came from users of Curriculum A. This may be attributed to the lack of written specifications on how to complete one lesson plan (i.e., carrying-over into the next day and unfinished work). The increasing amount of dissatisfaction might be attributed also to an initially high level of expectation at receiving a design of curriculum with which they were familiar. There were strong indications in the group using Curriculum A that dissatisfaction rested more on the particular lesson plans they received, than on lesson plans generally.

The group using Curriculum A showed the greatest overall change in attitudes and perceived knowledge, yet appeared to be the most dissatisfied with their curricular design. This seemingly contradictory finding perhaps points to the need for further studies of curriculum design, with a focus on decisions of developers to design curriculum according to teacher preference, and according to the results gathered in research of teacher use of selected designs of curricula.

Curriculum B

Teachers in this group, more than teachers in the other groups, viewed their curriculum as a source of worthwhile information regarding understanding the theme of balance, than for teaching it. This might be attributed to a relative emphasis in this curriculum on content outlined in a minimally prescriptive fashion. Another possible consequence of the lack of prescriptiveness may have been the greater variety of implementation schemes offered by this group. Some teachers in this group suggested that teaching material in the form of lesson plans was needed to help them use their curriculum.

From this group came the greatest variety of suggestions for curriculum design. Suggestions included: combining lesson plan type of design and an outline or list type of design in a single curriculum to accommodate both types of curricular design, providing content, tasks and teaching suggestions in a hierarchical order and leaving the actual lesson plan design up to the teacher, and providing lesson plans which are designed to be developed over three or four classes.

Curriculum C

The group that used Curriculum C expressed less satisfaction in the interviews with their curriculum than did the other groups. This group used the greatest variety of components within their particular curriculum, but suggested that a lack of prescriptiveness hindered their teaching of a subject for which they were not trained.

The teachers in this group, as well as the teachers in the group that used Curriculum B, when asked if they would have preferred lesson plans, were unanimously in agreement. However, in the interviews, the teachers did not suggest alternate curricular designs, indicating a possible lack of awareness of the possible designs which are available.

Conclusions to the Research Questions

Question 1

Does the design of gymnastics curricula have a relationship to teacher attitudes towards elementary school gymnastics?

The design of gymnastics curricula does have a relationship to teacher attitudes towards elementary school gymnastics. More specific and detailed curricula appear to be the most influential type of design in causing positive changes in teacher attitudes toward elementary school gymnastics.

Question 2

Does the design of gymnastics curricula have a relationship to teachers' perceived knowledge regarding the theme of balance?

The design of gymnastics curricula does have a relationship to a teacher's perceived knowledge regarding the theme of balance. Prescriptive and detailed curricula appear to be the most influential in bringing about increases in teachers' perceived knowledge regarding the theme of balance.

Question 3

How do teachers perceive and value selected curricula provided to assist their decision-making in the implementation process?

Indications are that teachers have varying needs and desires regarding curricula. The valuing of a design of a curriculum as an aid in decision-making in the implementation process depends on individual needs and preferences. From the findings of this study, some aspects which influence a teacher's decision to value a curriculum include: the success and enjoyment of the children, teachers' perceived success regarding implementation, and the clarity and potential utility as perceived by the teacher of the written curricula.

Additional Conclusions

1. A variety of curriculum designs is necessary to meet the varying needs and desires of non-specialist teachers. The following types of curriculum design were suggested by teachers from the study: outlining instructional objectives with relevant theme material listed under each objective; one lesson plan for each of the major gymnastic foci (e.g. floor work, apparatus and partner work); and curricula with both prescriptive and non-prescriptive-type materials provided on a single topic. Teachers desire to choose the design most appropriate for them in their initial implementation period, then use a curriculum design in subsequent implementation periods.
2. Teachers prefer to use lesson plans for teaching a subject of non-speciality in an initial implementation period. From this study, indications are that implementation practices using lesson plans vary from verbatim translation of lesson plans to reference back to a plan for teaching ideas when they are required.
3. Information for the non-specialist teacher about teaching methods is valued highly and used more than information about content. A number of teachers in this study indicated that they spent less time reading their curricula to understand the theme and more time reading their curricula to prepare teaching strategies.
4. Teachers modify and adapt the intentions of the curriculum material. A variety of implementation practices was described by teachers in this study. The group who used the lesson plans modified curricular

intentions least. Teacher translation of the lesson plans into practice occurred in two main ways: completing one lesson over two or three days, or implementing one of the eight lessons a day. The indications were from the interviews that users of Curriculum B modified their curriculum intentions the most. This translation of their material into practice occurred in a variety of ways. These included reliance on the sample lesson plan provided with limited reference to accompanying curricular components, and reliance on the instructional objective component with limited reference to other curricular components.

Summary of the Study

It was the purpose of this study to examine the relationship between selected curriculum design and teacher attitudes towards elementary school gymnastics at the Grade Four level and teachers' perceived knowledge regarding the theme of balance.

The initial task of the researcher was to design three curricular formats on the gymnastics theme of balance for Grade Four teachers. Each curriculum differed in the specificity of the theme material provided and in the design of a unique component found in each curriculum. Each curriculum contained fourteen similar components. The organization of information about content, teaching strategies and learner experiences in a fifteenth component was different in each curriculum. In one format the component was organized into eight lesson plans. In the second format the component was organized in outline form with information listed under headings entitled, Floor Work, Apparatus Work, and Teacher Suggestions. In the third format only the fourteen common components were present.

A total of thirty teachers was involved in the study. The teachers selected were non-specialists in physical education who were teaching their own physical education class and who had no more than one university training course in elementary school physical education. One group of ten teachers was randomly selected and used one format of curriculum for an implementation period of four weeks. Three different groups were working on three different curricula.

An attitude questionnaire was developed and validated and was intended to examine teacher attitudes regarding elementary school gymnastics. Each teacher completed the questionnaire before and after implementation. A knowledge questionnaire was also developed and validated. This was designed to examine a teacher's perceived knowledge regarding balance. It was administered before and after implementation. An interview schedule was designed and conducted after implementation.

Nine teachers were randomly selected for in-depth personal interviews. The remaining twenty-one teachers were interviewed by telephone. This interview was an abbreviated version of the in-depth interview. Each interview was designed to probe into each teacher's implementation of their particular curriculum.

The indications from this study were that more specific and detailed designs of curricula appear to be the most influential in causing positive changes in teachers' attitudes, and in bringing about increases in teachers' perceived knowledge regarding the gymnastics theme of balance. Despite this, the teachers who most valued specific and detailed curricula expressed more dissatisfaction with their particular curriculum. The valuing of curricular design as an aid in decision-making in the implementation process depends on the individual teacher. Factors which influence a teacher's decision to value a particular curricular design depends on the individual's needs, preferences and implementation strategies used with the curriculum.

Recommendations

Recommendations for Further Study

1. The interview data noted that any curriculum used in future implementation studies should include visual materials, charts, videotapes and illustrations. The use and perceived value of these to teachers could be examined. Teachers in each group suggested that inclusion of the above aids would have helped enhance clarity and worth of the curriculum.
2. An ethnographic-type study could be conducted which would provide an in-depth examination of non-specialist teachers' implementation practices. An examination of actual teaching practices can provide a more realistic and accurate picture of implementation procedures and problems. Questions which could be examined in such a study include: What are the preplanning steps teachers conduct? How does the non-specialist teacher use a written curriculum for a subject in which they are not trained? What practices and procedures do teachers engage in during implementation? What are the reactions and attitudes of teachers during implementation?

Recommendations for Curriculum Design

3. A variety of materials in different designs should be made available by school systems for teacher use. This study indicated that teachers have varying needs and desires regarding curriculum and provision of a variety of curricula would help meet these needs and desires. In addition, curriculum developers should specify how to implement one lesson over two or three days. Teacher implementation strategies were

shown to differ widely in this study.

4. A review of the predominant designs of elementary school physical education curricula should be conducted. Evaluation of these curricula by users should be one basis for curriculum development decisions by school systems and curriculum developers. It was noted that the group of teachers who increased the most in attitudes and perceived knowledge were generally the most dissatisfied with their curriculum.
5. Teacher involvement in the development of curricula should be encouraged and provisions made by local systems for their involvement at all stages of the curriculum process from development through to piloting. Teachers are the final arbitrators of curriculum decisions, and it is at the teaching level that input has, in the past, been ignored.
6. A team approach to curriculum development projects must be considered. The input of people at all levels of education into a curriculum's development should be ongoing and pervasive. This would allow for the input of people of varying levels of experience and perspective.

Recommendations for Gymnastics

7. Teacher inservice in gymnastics should be offered throughout a school year. Teaching methods, use of apparatus and use of curriculum are two areas on which inservice sessions could focus. Sequence and routine development and partner work could be additional areas of focus in both gymnastics inservices and in gymnastics curriculum. These were the areas mentioned most

often by teachers in this study as requiring attention.

BIBLIOGRAPHY

BIBLIOGRAPHY

Alberta Department of Education. *Elementary Physical Education*, Edmonton, Alberta: Department of Education, 1969.

Alberta Department of Education. *Elementary Physical Education: Interim Curriculum Guide*, Edmonton, Alberta: Alberta Education, 1981.

Almond, Leonard. "Teacher Involvement in Curriculum Planning." *Curriculum Development in Physical Education*. London: Granada Publ., 1976.

Anderson, Scarnia B.; Ball, Samuel and Murphy, Richard T. "Encyclopedia of Educational Evaluations." *Concepts and Techniques for Evaluating Education and Training Programs*. San Francisco: J. Bass Publ., 1976.

American Psychological Association. *Standards for Educational and Psychological Tests and Manuals*. Washington: American Education Research Association (and) National Council on Measurement in Education, 1966.

Aspin, D.N. "Kinds of Knowledge; Physical Education and the Curriculum." *Journal of Human Movement Studies*, Vol. 3, No. 1, (Mar.), 1977.

Barber, Theodore X. "Pitfalls in Research: Nine Investigator and Experimentor Effects." *Second Handbook of Research on Teaching*. New York: Rand McNally Publ., 1973.

Beauchamp, George A. *Curriculum Theory*. Wilmette, Illinois: The Kagg Press, 1975.

Bell, John B. "A Survey of Elementary School Physical Education in the Edmonton Public Schools." Master's Thesis, University of Alberta, 1974.

Berman, P. et al. *Federal Programmes Supporting Educational Change*. Santa Monica: Rand Corporation, 1975.

Bjork, Walter Eugene. *Curriculum Implementation*. Chicago: Northwestern University, 1970.

Bjork, Walter Eugene. "A Study of the Influence of the Role of the Curriculum Consultant on Curriculum Implementation." Unpublished Doctoral Dissertation. Chicago: Northwestern University, 1970.

Bohrnstedt, George W. *Reliability and Validity Assessment in Attitude Measurement*. Chicago: Rand McNally Co., Publ., 1970.

Calgary Board of Education. *Physical Education Curriculum Action Project, P.E.E.R.* Calgary, Alberta: Calgary Board of Education, 1976.

Calgary Separate School Board. *Cal. Sep. P.E.P.*, Calgary, Alberta: Calgary Separate School Board, 1978.

Connelly, Michael. "Curriculum Decision Making by Teachers." *Perspectives Curriculum*. A Paper Presented to the CACS Conference, 1974.

Crowther, Frank Allan. "Factors Affecting the Rate of Adoption of the 1971 Social Studies Curriculum for Elementary Schools." Master's Thesis, University of Alberta, 1972.

Fullan, Michael and Pomfret, Allen. "Research on Curriculum and Instruction Implementation." *Review of Educational Research*, Vol. 46, 1977.

Goodlad, John I. *School Curriculum and the Individual*. Los Angeles, Cal.: Ginn and Company, Publ., 1966.

Gross, N.; Giaquinta, J.; and Bernstein, M. *Implementing Organizational Innovations: A Sociological Analysis of Planned Educational Change*. New York: Basic Books, 1971.

Hall, Gene F., and Loucks, Susan F. "A Developmental Model for Determining Whether the Treatment is Actually Implemented." *American Educational Research Journal*, Summer, Vol. 14, No. 3, 1977.

Jewett, Ann E. and Mullan, Marie R. *Curriculum Design: Purposes and Processes in Physical Education Teaching-Learning*. Washington: AAPHER Publ., 1977.

Kane, John. "The Schools Council Inquiry - Interpretation of Social Context." *Curriculum Development in Physical Education*. London: Granada Publ., 1976.

Kass, Heidi and Wheeler, Alan E. "A Concern-Based Developmental Sequence of Teacher Professional Growth." A paper presented to the Annual Meeting of the Canadian Society for the Study of Education, University of Alberta, 1975.

Katz, D. and Stotland, E. "A preliminary statement to a theory of attitude structure and change. *Psychology, A Study of Science*. Vol. 3, New York: McGraw-Hill, 1959.

Kerlinger, F.N. *Science*. New York: McGraw-Hill, 1959.

Kerlinger, F.N. *Foundations of Behavioural Research*. Second edition. New York: Holt, Rinehart and Winston, 1973.

Kirchner, Glenn. *Physical Education for Elementary School Children*. Fourth Edition. Dubuque, Iowa: Wm. C. Brown Co., Publ., 1978.

Krech, David; Critchfield, S. and Ballachey, Egerton, L. Individual in Society. New York: McGraw-Hill, 1962.

Kruger, Hayes and Kruger, Jane Meyers. Movement Education in Physical Education. Dubuque, Iowa: Wm. C. Brown Co., Publ., 1977.

Leithwood, Michael. "The Dimensions of Curriculum Innovation." Curriculum Studies, Vol. 13, No. 1, 1981.

Logsdon, Bette J.; Barrett, Kate R.; Ammons, Margaret; Broer, Marion R.; Halvorson, Lola E.; McGee, Rosemary; Robertson, Mary Ann. Physical Education for Children: A Focus on the Teaching Process. Philadelphia: Lea and Febiger, Publ., 1977.

Lumby, Colin. "What if Daily Physical Education Were a Reality in the Elementary School K-Grade 6?" Runner, Vol. XVII, Summer, 1980.

Mauldon, E. and Layson, J. Teaching Gymnastics. London: McDonald and Evans, Publ., 1965.

Mauldon, E. and Layson, J. Teaching Gymnastics. Second edition. London: McDonald and Evans, Publ., 1979.

McCutcheon, Gail. "How Do Elementary School Teachers Plan? The Nature of Planning and Influences on It." The Elementary School Journal, Vol. 81, No. 1, 1980.

McGeowan, J. "Organizational Climate for Change in Schools: Towards Definition and Measurement." Education Studies, Vol. 5, No. 3, October, 1979.

McLune, Jr., and Reed, Robert. "The Development of an Analytical Framework and Survey Questionnaire to Classify the Instructional Planning Activities of Elementary Teachers." Unpublished Doctoral Dissertation, Case Western U., Publ., 1970.

Morison, Ruth. A Movement Approach to Educational Gymnastics. London: J.M. Dents and Sons Ltd., Publ., 1969.

Oxford English Dictionary. Oxford University Press. Edition C.T. Onions, 1947.

Poll, Diane. "The Study of Selected Factors Related to the Implementation of Centrally Prepared Lesson Plans." Unpublished Doctoral Dissertation, Northwestern University, Evanston, Illinois: 1970.

Powell, H. Knowledge of Actions. London: George Allan and Unwin, Publ., 1967.

Price, H.H. "Some Considerations About Belief." Theories of Knowledge. New York: McMillan Publ., 1965.

Red Deer Public School District. P.E.P. Physical Education Program. Red Deer, Alberta: Red Deer Public School District, 1978.

Rogers, E.M. and Shoemaker, F.F. Communication of Innovations. A Cross-Cultural Approach, 2nd ed. New York: Collier-Macmillan, Publ., 1971.

Ryle, G. "Knowing How and Knowing That." The Concept of Mind. London: Barnes and Boble, Publ., 1949.

Rynin, David. "Knowledge, Sensation and Certainty." Epistomology. New York: Avrum Stroll, ed., 1967.

Scheffler, Israel. Conditions of Knowledge. Harvard U.: Scott-Foresman, Publ., 1965.

Schaffarzick, L. and Hampton, David H. "Strategies for Curriculum Development." Questions and Requirements for the Comparative Study of Curriculum Development Procedures. Berkeley, California: National Institute of Education, 1975.

Sikorsk, L. Implementing Curriculum. San Francisco: Far West Laboratory, 1976.

Stanley, J. and Glock, Marvin D. Evaluating Pupil Growth: Principles of Testing and Measurement. Boston: Allyn and Bacon, Publ., 1969.

Stanley, Sheila. Physical Education: A Movement Orientation. Second Edition. Toronto: McGraw-Hill Ryerson, Publ., 1977.

Summers, Gene L. Attitude Measurement. Chicago: Rand McNally and Co., 1970.

Taba, Hilda. Curriculum Development, Theory and Practice. New York: Harcourt, Brace and World, Publ., 1962.

Taylor, P.H. "How Teachers Plan Their Courses." Studies in Curriculum Planning. London: Eyre and Spottiswoode for NEER, 1970.

Thompson, L. "A Gymnastics Resource for Elementary School Teachers." Master's Thesis, University of Alberta, 1979.

Thurston, L.L. and Chave, E.J. The Measurement of Attitude: A Psychological Method of Some Experiments with a Scale for Measuring Attitude. Chicago: The University of Chicago Press, 1956.

Tom, Al. "Teacher Reaction to a Systematic Approach to Curriculum Implementation." Curriculum Theory Network, Toronto: Ontario Institute for Studies in Education, Spring, 1973.

Ulrich, Celeste and Nixon, John E. Tones of Theory. Washington, D.C.: AAPHER, 1972.

Webster's Third New International Dictionary. Massachusetts: G and C Merriam Co., 1976.

Williams, Jean. Themes for Educational Gymnastics. First Edition, London: Lepus Books, 1974.

Williams, Jean. Themes for Educational Gymnastics. Second Edition. London: Lepus Books, 1979.

Young, Jean J.; Young, Clifton H. "The Curriculum Decision Preferences of Alberta School Personnel." Edmonton: University of Alberta, 1977.

Zahorik, John A. "Teachers' Planning Models." Educational Leadership, Washington: Association for Supervision and Curriculum Development, 1975.

APPENDICES

APPENDIX A

CURRICULUM COMPONENTS COMMON TO THE THREE CURRICULA

FOREWORD

BALANCE

APPENDIX A

CURRICULUM COMPONENTS COMMON TO THE THREE CURRICULA

TABLE OF CONTENTS

PAGE

I FOREWORD . . . .

A. The Concept of Balance . . . .

B. The Purposes and Place of Balance in the Curriculum . . . .

C. The Components of Balance. . . . .

D. The Development of the Theme of Teaching Balance . . . . .

E. Apparatus Work and Balance . . . .

F. Partner Work and Balance . . . .

G. The Child and Balance. . . . .

H. Summary - Expectations by Teacher for Children . . . . . .

II INTRODUCTION TO THE UNIT . . . .

A. Goals for the Theme of Balance . . . .

B. Instructional Objectives for the Theme of Balance. . . . .

C. Development of the Theme Material. . . . .

- Floor Work . . . .

- Apparatus Work . . . .

- Partner Work . . . .

IV EVALUATION . . . .

V DEFINITIONS. . . . .

VI BIBLIOGRAPHY . . . .

BALANCE

FOREWORD

A. The Concept of Balance

Balance is the ability to hold one's body over a comparatively small base (Mauldon and Layson, 1965).

B. The Purpose and Place of Balance in the Curriculum

Elementary school gymnastics offer a variety of challenges to encourage children to discover themselves and their potential in different types of movement. These include travelling-type actions, weight-transference actions . . . like rolling and flight. A fundamental part of elementary school gymnastics is balance. One purpose of elementary school gymnastics is to develop each child's latent movement potential in balancing activities.

Experience in balance helps children learn how to cope with balance, to gain control, comfort and confidence in using balance. Balance is part of a larger gymnastic area, controlling one's body. Our society has removed a number of potential situations where body control can be achieved. The physical environment no longer provides many challenges, sources of adventure and places to develop this skill. General body management skills - including balance, are being lost. The purpose of elementary school gymnastics is to develop good movers with a wide range of movement experience, the replacing of lost environments and situations. Balance has a place in this scheme; its purpose is to develop body control in different situations; the ability to manage one's body weight effectively.

C. The Components of Balance

The beginnings of balance are found in the basic ways the child manages his body, such ways as bearing one's weight on large body surfaces and remaining still. When the bases used to support one's weight are diminished, resulting in the body being held over a comparatively small base, one is experiencing balance.

In weight-bearing the focus is on the parts of the body supporting the body, and the achieving of balance is incidental. In balancing, the main stress turns to clarifying the theme of balancing, and to arriving into balances, maintaining balances, shapes used in balances, and leaving balances. The application of skill developed in weight-bearing and balance occurs in sequences or routines where balance is linked to other actions in a flowing sentence of movement.

D. The Development of the Theme of Balance

The first task related to balance is to explore weight-bearing. Here the purpose is to discover the parts of one's body that can be used to hold one's weight, how to adjust these positions attained, what shapes can be made, and how to move from one weight-bearing base to another.

The next task is to explore balance activities. These include:

1. Arriving into balance. This involves the gradual or quick diminishing of bases of support used in weight bearing, as well as jumping into balances, rolling into balances, and travelling into balances (e.g. walk, run). Use of different speeds, directions and pathways helps to develop this aspect of balance.
2. Maintaining balance. This involves adjustments of body tensions with exploration of the support area of balance and the shape one's body can assume while balancing.
3. Leaving balance. This involves moving the center of gravity outside the base of support. This can involve moving from one balance to another balance, or action (rolls, flight or travel), or it can involve leaving a balance with a "loss of control" so a child must recapture command of his body with use of body parts. Use of different speeds, directions and pathways help to develop this aspect of balance.
4. The final task is the applying of skill in balance for the development of sequences and routines where balance is the focus:
    a. Sequences - the linking together of two or more like actions (e.g. balances) so that the result is a movement sentence, characterized by flow and clarity. The linking actions, those actions between each balance, can be rolls, different types of travels like runs or skips or flight.
    b. Routines - the linking together of unlike actions (e.g. rolls, balances, flight to rolls). The result is a movement sentence involving at least one example each of a rolling type action, an example of flight, a travelling-type action, and a balance. The linking actions can be rolls, travels and flight as well.

E. Apparatus Work and Balance

Throughout the exploration of weight-bearing activities, and into the exploration of balance activities, and culminating with sequences and routines, a variety of apparatus is used. Apparatus provides a new environment where children can explore the tasks related to balances, and apply the skill they have gained. Use of low-level apparatus such as benches, provides an intermediate step before large apparatus is used. Both apparatus situations encourage:

1. Children to eventually be able to select and arrange their own apparatus and apparatus arrangement.
2. Development of arriving into and leaving from balances, using apparatus.
3. Development of the same types of balance-related tasks that were explored on the floor, using apparatus.

A more detailed outline of how to use and arrange apparatus is found on pages 14 to 16.

F. Partner Work

Throughout the development of weight-bearing, balance, sequence and routine, and apparatus-related activities, partner work is included. Partner work provides a different challenge where two people may select, adapt and adjust skills gained in balance on the floor apparatus to work with another person. Selection of different balance-type activities, adaptations of sequences and routines, adjustment of speed, timing, direction and pathways all occur. Partner work includes:

1. Matching - involves two people doing exactly the same action at exactly the same time. They may be side by side, facing each other (i.e. mirroring), back to back or in single file.
2. Negotiation of balances - involves one partner making a balance and the other going under, over, around or through the shape made. This can involve continuous interchanging of shape and negotiation.
3. Meeting and parting - involves two people moving along and intersecting pathways.
4. Assisted balance - involves two people assisting each other arriving into the balance, then maintaining balance, and two people holding and losing balance, using each other.
5. Partner sequences and routines - involves two people selecting from their individual work, and adapting and adjusting this work

to develop partner sequences and partner routines.

G. The Child and Balance

Children who are ready for continued basic work in fundamental body management (i.e. weight-bearing) will experience success in this theme. This theme is appropriate for children who can successfully achieve stillness bring their bodies to a stop in a variety of ways) and who can use a variety of body parts to bear their weight. Children who are ready for more advanced work (i.e. balance) will be challenged and motivated as well by work in this theme. This is due to a number of factors:

1. Through movement experiences children can begin "where they are" and develop a wider and deeper ability to manage their bodies in activities related to balance.
2. Skill in general body management, the ability to control, adjust, and adapt one's body in weight-bearing and balancing activities can continually be developed (Mauldon and Layson, 1970, Morrison, 1969).
3. The material is generally presented in tasks that are applicable to a wide range of children. Each child can solve or carry out the task in his own way.
4. Refinement and mastery of skill can occur at whatever skill or stage of development a child may be.
5. Selected authors (Mauldon and Layson, 1979; Williams, 1979; and Morrison, 1969) include balance-type themes as work that can benefit children in the 9 to 12 year old range. The titles of their books are found in the back of this resource under Bibliography.

H. Summary - Expectations by Teacher for Children

Children need to be exposed to a number of activities that will develop body management, skill and balance. The society children live in and are growing up into has, for the most part, eliminated situations that foster and develop body management skills. The experiences provided in the theme of balance can provide the experience and skill children require. Through the provision of activities that lead children to explore weight-bearing, arriving into balance, maintaining balance, shapes in balance and leaving balance, children, at practically any developmental stage, can develop skill in balance. When required to apply skill in apparatus and partner work, and in routines and sequences, children's "consolidation" of the concept of balance is enlarged. To capsulize the intention of the resource, the goal of the resource may be stated as:

> The clarification for the child of the concept of balance, and the development of understanding, experience and skill in the theme of balance.

Teachers should attempt to cover the theme material as comprehensively as possible. Some teachers may decide to organize and teach the material for one lesson and find that two or more class periods are required. They may decide to follow through and use two class periods. Other teachers may decide to organize and teach the material for one lesson and insist on using one class period only. Their goal is to cover and complete all the theme material on balance that is available. This type of decision (depth vs. breadth) is an individual one.

INTRODUCTION TO THE UNIT

BALANCE

BALANCE

INTRODUCTION TO THE UNIT

A. Goals for the Theme of Balance

Definition

A goal is a statement of what the child should learn by the end of the unit. These statements are organized under three domains: the Affective (a child feeling); the Cognitive (a child knowing and understanding); and the Psychomotor (a child doing).

Overview

Experiences in balance are presented in this unit so that understanding and skill in balance activities are developed. Progress throughout the unit continuously focuses on development of weight-bearing and balance skill, development of skill in arriving, leaving, maintaining, and shapes used in balance. The use of spatial factors such as speed and directions add to the development. The applying of skill to partner and apparatus situations and in sequences and routines continues to clarify and develop the concept of balance. It is through the organization of the resource that the goal stated on page 203 is to be realized. Under this goal, the intended learning outcomes have been outlined.

The Overall Goal for the Theme of Balance

The clarification for the child of the concept of balance, and the development of understanding, experience and skill in the theme of balance.

A. Goals for the Theme of Balance

Affective

1. To appreciate and value balance, both as a single component of movement, and in the context of sequences and routines.

2. To appreciate one's body, and the ability of one's body to reach excellence in movement performance with balance.

Cognitive

3. To understand the concept of balance, the structure of balance, and the elements of balance.

Psychomotor

4. To know how to gain balance, maintain balance, and recover from balance.

5. To know how to achieve and be able to select and perform appropriate balances in selected situations.

6. To develop skill in balancing. This involves the child's being able to recognize his circumstances and environment, and to choose and carry out balance responses based on the circumstances.

7. To develop balancing skills, specific motor responses which become learned habits that serve to develop general skill in balancing.

8. To develop body mastery, the ability to control one's body in a variety of balancing situations.

9. To develop an awareness of one's body, the body actions one is capable of performing (e.g. turning, balancing, travelling) and of one's body parts (e.g. arms and legs) and these can be used in balancing situations.

10. To develop a repertoire of movement(s).

11. To develop sequences and routines using balances.

BALANCE

B. Instructional Objectives for the Theme of Balance

Definition

Instructional objectives are statements of what the child will be able to do each lesson. The objectives of the theme on balance are the development and completion of specific sequences of movement, gymnastic work called sequences and routines.

Overview

The written curriculum developing the theme of balance is arranged around nine foci, or final pieces of work called sequences and routines. These have been called instructional objectives in the unit. Associated with each instructional objective are sub-objectives. These are objectives related to particular aspects of balance such as body parts to be used, or shapes to be assumed. These are developed as the theme material found in the resource is presented through tasks. The focus of each (lesson) should be on applying these skills in the sequence and routine.

The Instructional Objectives

Objective A:

To develop an individual floor sequence using at least three balances, each balance different in body bases used to support weight and body shape assumed.

Sub-Objectives:

- Development of skill in balancing legs, arms and large body parts.
- Development of skill in moving from weight-bearing to balance positions, adjusting body bases and securing equilibrium.
- Development of willingness to listen to problems, to think about them, and to seek better ways of solving them.

Objective B:

To develop an individual sequence of at least three balances on benches or other low-level apparatus. Variations of body base and body parts used will be required.

Sub-Objectives:

- Development of skill in balancing on apparatus emphasizing body parts - legs, arms, large body parts.
- Development of skill in adjusting free body parts in balance situations.
- Development of skill in making shapes.
- Development of ability in using speed changes to move into and out of balances.

- Development of skill in reducing bases used to balance, securing and maintaining equilibrium.

Objective C:

To develop an individual sequence of at least three balances on "large" apparatus. Variations of body base and body parts used will be required.

Sub-Objectives:

- Development of skill in arriving into and leaving balances on apparatus.
- Development of use of direction change in moving into balance.
- Development of "linking" actions that are used to join balances.

Objective D:

To develop an individual floor routine in which balances are used in conjunction with a rolling-type action, a travelling-type action and flight.

Sub-Objectives:

- Development of skill in using twists, turns, rolls, travels and flight to head into balance and out of balance.
- Development of understanding of bases of support and how size of bases affects balance.
- Development of a willingness to carry tasks through to completion, to continue to practise exploration of variations and repetition of these variations once the selection of response has been made,

Objective E:

To develop an individual floor routine on benches or other low-level apparatus in which balances are used conjunction with a rolling-type action, a travelling-type action and flight.

Sub-Objectives:

- Development of varied use of space around apparatus.
- Development of skill in arranging and using apparatus.

Objective F: To develop an individual routine on large apparatus. Balance(s) is used in conjunction with a rolling-type action, travelling-type action and flight.

Sub-Objectives: - Development of skill in use of speeds, direction and pathways in arriving into and leaving balances and apparatus.

Objective G: To develop a sequence with a partner on the floor, in which two people select and combine aspects of individual floor sequences. Floor sequences must demonstrate matching or mirroring, negotiating of balances and assisted balances.

Sub-Objectives: - Development of an ability and willingness to discuss, give and take and perform with a partner.

Objective H: To develop a routine with a partner on the floor in which two people select and combine selected aspects of individual floor routines. The partner routines must demonstrate balances used in conjunction with rolling-type actions, travelling-type actions and

Sub-Objectives: - Development of an ability and willingness to discuss, give and take and perform with a partner.

Objective I: To develop a routine with a partner on apparatus. The partner routine must demonstrate balances used in conjunction with rolling-type actions, travelling-type actions, and flight.

BALANCE

C. Development of the Theme Material - Balance

Definition

The theme material for balance is chosen from the classification of body action or body awareness theme. It includes the elements of balancing, using body parts, balancing in shapes, arriving into and leaving balances. It includes aspects of speed changes, direction, and pathway change. It involves apparatus, partner, sequence and routine work.

Overview

1. Theme material is arranged under each of the nine instructional objectives outlined on pages 10-12. Teachers can develop approximately eight lessons from the theme material provided by reading the information under the heading - movement development.

   Teaching suggestions: Each lesson should involve both floor work and apparatus work. A suggestion for this "mixing" might include:

   first 2 or 3 lessons - 2/3 floorwork
   - 1/3 apparatus work
   final 4 or 5 lessons - 1/3 floorwork
   2/3 apparatus work

Floor Work

2. Floor work includes exploration of the theme of balance to develop specific balance skills in a wide variety of situations. In each lesson these skills can be developed in these sequences of teaching areas:

   - exploration
   - balancing on body parts
   - balancing and body shapes
   - moving into balances

- leaving balances
- sequences or routines

(i) These teaching areas can best be approached by setting tasks using the following classifications:

- arms - develop balance skills emphasizing arms
- legs - develop balance skills emphasizing legs
- whole body - develop balance skills emphasizing whole body.

(ii) Tasks may be arranged from exploratory to specific through each of the arms, legs and whole body focus.
e.g. exploratory task (through legs) - jump into balances
specific task (through legs) - swing one leg to arrive in a balance.

Apparatus Work

3. Apparatus work is the exploration of the theme leading to development of skill in balancing and specific skills on a variety of apparatus. The progression is application of floor work into simple, then progressively higher and more challenging apparatus. In each lesson using apparatus, these skills can be developed in sequence of teaching situations:

- exploration
- balancing on body parts
- balancing and body shapes
- moving into balances
- leaving balances
- sequences or routines

(i) These teaching areas can best be approached by setting tasks through use of the following teaching foci:

- arms - develop balance skills emphasizing arms
- legs - develop balance skills emphasizing legs
- whole body - develop balance skills emphasizing whole body.

(ii) Apparatus used may be "low-level" initially, and these are used to be an intermediate step from floor work to large apparatus. They can be benches, boxes, low-level forms or chairs. There should be an arrangement of 5 to 10 pieces in 5 to 10 stations to permit grouping of children to work at different places. Large apparatus include climbers, poles and ladders on trestles, box horses and ropes.

(iii) Apparatus - Suggestions for Use

- For a class of 25 to 30 children, six stations are appropriate. This permits groups of four to five children to work at each station.

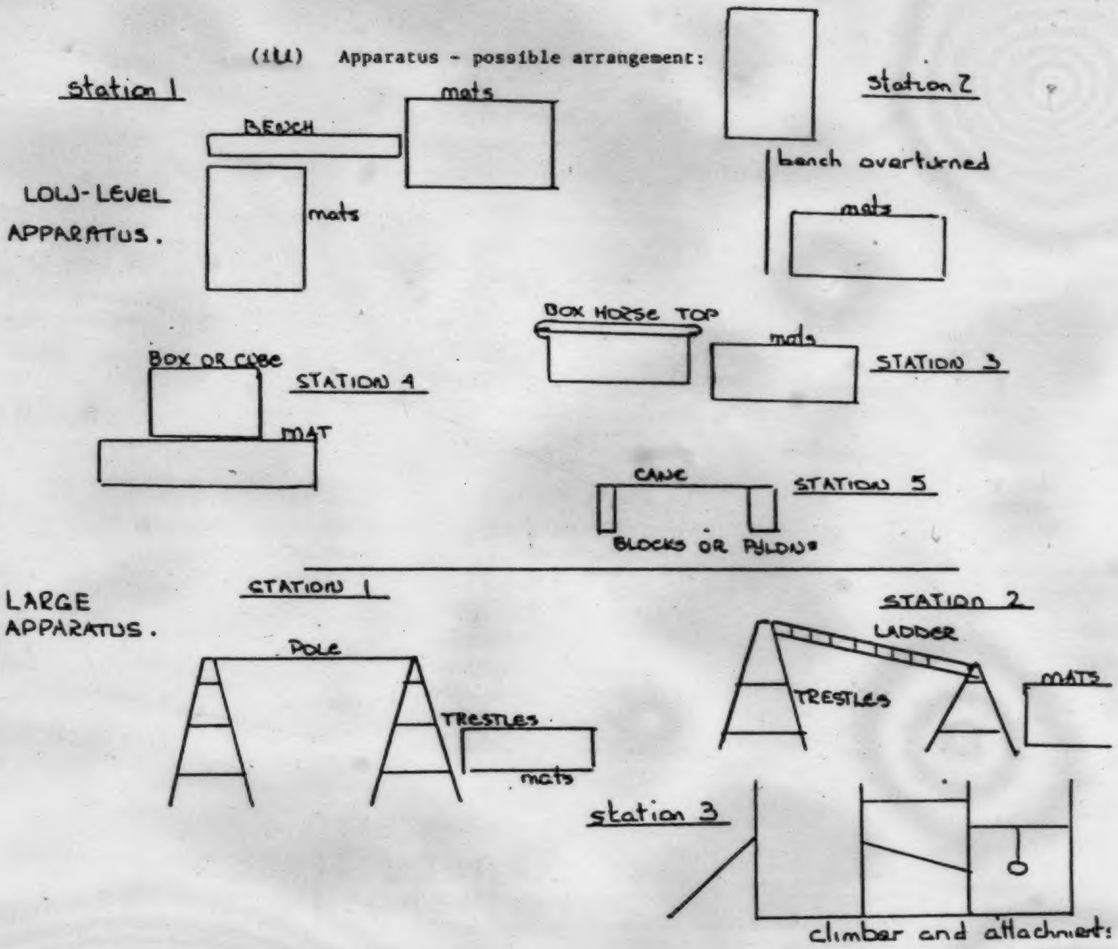
- Teachers may assign a group to a particular apparatus station in a lesson. Rotation may occur in the lesson to permit each group to work at a different station. For example, after each group has been at a station and has completed a routine there, the teacher gives a signal, and all groups move in a clockwise direction to a new station. In other instances, teachers may permit groups to stay at one station for an entire lesson to permit completion of polished routines that lesson. Next day, the groups may go to the next station.

- Teachers may decide on the choice and arrangement of each apparatus station initially (first two or three stations). "Low level" apparatus should be used here. Eventually, children can be given the choice of apparatus and arrangement.

- Each school can organize the teaching of gymnastics and the use of apparatus in a variety of ways. If teachers have decided to teach in a unit or block of time (successive gymnastics lessons, back to back) then apparatus can be set up and left up. In other instances, teachers in a school may alternate the teaching of gymnastics lessons with other physical education lessons during each week. In this case, all teachers may decide which days are to be gymnastics days (e.g. Tuesdays and Thursdays) so apparatus can be set up at the beginning of these days and taken down at the end of each day.

- Apparatus can be anything which is solid and stable . . . on which children can be off the ground (cubes, chairs, wooden boxes are unusual, but acceptable pieces of apparatus).

(iii) Apparatus - possible arrangement:


station 1
BENCH
mats
LOW-LEVEL
APPARATUS.
mats
Station 2
bench overturned
mats
BOX HORSE TOP
mats
STATION 3
BOX OR CUBE
STATION 4
MAT
CANE
STATION 5
BLOCKS OR PYLONS
LARGE
APPARATUS.
STATION 1
POLE
TRESTLES
mats
STATION 2
LADDER
TRESTLES
MATS
station 3
climber and attachments

Partner Work

4. Partner work is the exploration of related elements of the theme (balance) with one other person. In developing this aspect of the theme, the teacher should emphasize these elements:

   - matching or mirroring - copying another person's actions in a variety of situations
   - meeting and parting - following pathways and meeting another person, then following a pathway away
   - neglotiating balances - one person makes a balance and the other person goes under, over, on or around the balance
   - assisting balancing - partners help each other with balances.

IV. BALANCE

EVALUATION

1. Teacher evaluation is concerned with the successful completion of a finished piece of work (sequences and routines). Teachers may evaluate work in three areas: affective, cognitive and motor.

    A. Affective - the child will demonstrate interest and enthusiasm throughout the work.
    B. Cognitive - the child will be able to write down or describe pictorally each of his/her pieces of work. This occurs after completion of each objective.
    C. Motor - the child will be able to perform each of his/her 9 pieces of work. A start and finish must be included as well as the elements forwarded in the "material" under each objective.

2. Evaluation procedure: Teachers may indicate the child's success in achieving the instructional objectives by checking "the appropriate box whether the child was very good (v.g.), good (g) or needs improvement (n.i.).

3. Instructional Objective A - Example: For example, if the child was very enthusiastic in his work in achieving Instructional Objective A (affective) but had difficulty in communicating his work, either verbally or in writing (cognitive) and performed fairly well his sequence (motor), you might evaluate him as:

A: (Instructional Objective)	Affective			Cognitive			Motor		
	v.g.	g.	n.i.	v.g.	g.	n.i.	v.g.	g.	n.i.
	✓					✓		✓	

4. If a child receives an n.i., teachers need to consider "how" to get improvement. Remedial activities may include the following:

    A. Written description/evaluation of each child's area of weakness.
    B. Reference to the theme material provided to outline additional tasks for the child to respond to.
    C. Solicitation and arrangement for older students (upper elementary or high school students) or parent volunteers to spend time with each child, providing the tasks for the child to practise.

EVALUATION

INSTRUCTIONAL OBJECTIVE	AFFECTIVE			COGNITIVE			MOTOR		
	v.g.	g.	n.i.	v.g.	g.	n.i.	v.g.	g.	n.i.
A: For the child to develop an individual floor sequence using at least three balances, each balance different in body bases used to support weight, and body shapes assumed.	☐	☐	☐	☐	☐	☐	☐	☐	☐
B: To develop an individual sequence of at least three balances on benches or other low-level apparatus. Each balance must be different in body bases used to support weight and in body shape assumed.	☐	☐	☐	☐	☐	☐	☐	☐	☐
C: To develop an individual sequence of at least three balances on large apparatus. Each balance must be different in body base used and body shape assumed.	☐	☐	☐	☐	☐	☐	☐	☐	☐
D: To develop an individual floor routine in which balance(s) is used in conjunction and flow with a rolling-type action, a travelling-type action, and an example of flight.	☐	☐	☐	☐	☐	☐	☐	☐	☐
E: To develop an individual routine on benches, or other "low-level" apparatus. Each balance must be different in body bases used to support weight, and body shape assumed.	☐	☐	☐	☐	☐	☐	☐	☐	☐

INSTRUCTIONAL OBJECTIVE	AFFECTIVE			COGNITIVE			MOTOR		
	v.g.	g.	n.i.	v.g.	g.	n.i.	v.g.	g.	n.i.
F: To develop an individual routine on large apparatus. Balance is used in conjunction and flow with a rolling-type action, travelling-type action, and example of flight.	☐	☐	☐	☐	☐	☐	☐	☐	☐
G: To develop a sequence with a partner on the floor in which two people select or combine aspects of individual floor sequences. Floor sequences must demonstrate matching or mirroring, negotiating of balances, and assisted balances.	☐	☐	☐	☐	☐	☐	☐	☐	☐
H: To develop a routine with a partner on the floor in which two people select and combine selected aspects of individual floor routines. The partner routine must demonstrate balances in conjunction and flow with rolling-type actions and examples of flight.	☐	☐	☐	☐	☐	☐	☐	☐	☐
I: To develop a routine with a partner on apparatus. The partner routine must demonstrate balance used in conjunction and flow with rolling-type actions, travelling-type actions, and examples of flight.	☐	☐	☐	☐	☐	☐	☐	☐	☐

V. Definitions

Arriving into balances - on the floor this requires use of an action that leads into a balance appropriately. On apparatus, it is called a mount.

Base of support - for weight-bearing and balances, the base of support is formed by or with the body parts which are on the ground or apparatus and which bring about the balance.

Directions - forwards, backwards, diagonals and sideways are possible directions a child may follow. The child may face the same wall and go in these directions, or may turn and face a new wall when changing directions.

Falling - an uncontrolled action leading from one position to another, requiring the child to use hands or other parts to break the fall.

Finish - the completion of a sequence or routine. Children may equate a finish to a period or exclamation mark in a sentence.

Flight - includes jumps and landing in different combinations:
- 1 foot to 1 foot
- 1 foot to 2 feet
- 2 feet to 1 foot
- 2 feet to 2 feet.

General space - the general area in a gymnasium for example, in which children may travel (on different pathways, in different directions).

Large apparatus - apparatus that includes climbers and attachments, trestles with poles and ladders, box horse beams etc.

Leaving balances - involves any action that takes a person from a balance into another balance, a travel, a roll, etc. This can be accomplished by turning, twisting, tipping, falling, and rolling.

Low-level apparatus - apparatus used as an intermediate step between floor work and large apparatus work. It includes benches, low beams, boxes, box horse top, canes or skittles, chairs, etc.

Maintaining balance - involves use of body tension to control balance, and adjustment of body parts to keep the balance.

Pathways - the floor pattern a child makes when travelling. These may vary among straight, curved or zigzag pathways.

Personal space - the space or area immediately surrounding a "still" or moving child, where the child can reach.

Routines - the linking together of unlike actions (e.g. rolls, balances, flight to rolls, etc.). The result is a movement sentence involving at least one example of a rolling-type action, an example of flight, a travelling-type action, and a balance.

Sequences - the linking together of two or more like actions so that the result is a movement sentence of like actions (i.e. balance) characterized by flow and clarity.

Shapes in balances - shapes may be made with one's body and can be round or curled, straight and long like a pencil, wide-stretched like a "house" or twisted.

Spatial factors - include levels (high, medium, and low), directions (forward, backward and sideways) and pathways (straight, curved and zigzagged).

Start - the beginning of a sequence or routine, usually a balance. Young children may equate the start in gymnastics work to a capital letter in a sentence.

Tasks - questions or challenges put forward by a teacher to children. Tasks may be given in a variety of ways:
- to the whole class
- to one group at one station. This requires teachers to rotate from group to group, giving individual and group attention. The teacher completes the rotation by returning to the first group and evaluating the response there, and giving a new task
- to individual children.

Theme - a certain piece of movement (such as balancing, travelling on feet, flight, etc.) around which gymnastics work is organized.

Tipping - a gradual, controlled action leading from one position (i.e. balance) to another (push-up position).

Travelling actions/locomotion - travels from place to place on feet. May be runs, hops, skips, jumps, gallops or slides.

Travelling-type actions - includes walking, running, skipping, jumping and hopping.

Turning - a simultaneous movement of the whole body around a point.

Twisting - one part of the body remains fixed, parts of or the remainder of the body turns.

Weight-bearing - holding one's weight still on certain body parts (e.g. feet). The feeling is downward unlike balances where the feeling is one of being perched or upwards.

Weight-transference - the moving of one's weight on or over certain body parts as in rolling over a shoulder or sliding on one's tummy.

VI. BIBLIOGRAPHY

Mauldon, E. and Layson, J. Teaching Gymnastics, 1st edition, 1965.

Morison, Ruth. A Movement Approach to Educational Gymnastics, 2nd edition, 1969.

Williams, Jean. Themes for Educational Gymnastics, 2nd edition, 1979.

APPENDIX B

UNIQUE COMPONENT OF CURRICULUM A: EIGHT LESSON PLANS

APPENDIX B

UNIQUE COMPONENT OF CURRICULUM A: EIGHT LESSON PLANS

LESSON 1

Overview

Time spent on the floorwork part of this lesson should be approximately 2/3 of the class period. The last 1/3 should be used for apparatus work. Apparatus should be set up on five or more stations about the gym. As many stations as you will have groups of children should be set up (suggested number: 5 to 10). The tasks in the Movement Development part of the lesson are the sequence of questions that you present to the class as tasks to be solved. The following gives a summary of the lesson: Introductory Activities - Exploration and Shadow; Movement Development - Floor Work, development of a sequence using directional and speed changes; Final Activity - Free exploration on apparatus at the end of the lesson upon completion of instructional objective A.

Instructional Objective A:	For the child to develop an individual floor sequence of at least three balances, each balance different in body bases used to support weight and body shapes assumed.
Sub-Objectives:	- Development of skill in balancing on legs, arms, and large body parts. - Development of skill in moving from weight-bearing to balance positions, adjusting body bases and securing equilibrium. - Development of willingness to listen to problems, to think about them, and seek better ways of solving them.
Equipment:	Benches, mats, box horse tops, skittles and canes, boxes, notebook and pencil.
Introductory Activities: (3-5 minutes)	1. Free exploration on apparatus. 2. Children travel about the gym using various pieces of apparatus to assist in going over, under, around, or on. 3. Children travel about the gym going under, around, over, or on apparatus but gradually increase the time spent under, around, over, or on apparatus.

Movement Development

"Be still on one foot".

"Where can you place (various) free body parts such as your head, free leg?"

"Place your head low, to the side".

"Practise being still on the other foot . . . what are your free body parts doing?"

"Be still on two feet. What are your free body parts doing?"

"How many different ways can you be still, using hands and feet?"

"Show how you can lift different body parts high when still".

"Be still on two parts, one of which must be an arm or hand".

"Be still on three (four, then five)".

"Use at least one arm or hand here".

"Be still on large body parts like tummy, back, head".

"Where are you putting your free body parts?"

"Be still on these large parts. Be spread out and gradually bring body parts close together so you are still and in a curled shape. Practise different possibilities".

"Be still on four (then five) parts. Decrease the parts that are holding you. Keep your body still throughout".

Teaching Suggestions

The initial 6 tasks develop skills emphasizing feet. The next 3 tasks emphasize arms and the next 4 tasks emphasize whole body.

To develop control in holding the body weight over different body bases and body parts, the following points should be presented to the children while they are attempting the tasks.

1. Body weight over base of support
2. "Free" limbs can maintain support
3. Concentration is developed by focusing on points on wall or floor
4. Use just enough bodily tension to hold position

Children may be scattered in general space. The teacher can move freely among the children, setting tasks.

Sequences - involve combining two, three or more "like" gymnastics actions together into a movement sentence. The actual combination of two or three balances requires appropriate linking actions.
E.G.

Balance on one foot	roll over one shoulder	to balance on seat
	linking action	

Movement Development

"Choose your best balance . . . add a second balance to it, then a third".

"Try joining three new balances together but this time use rolling actions and travelling actions to join your three balances".

Teaching Suggestions

Teachers may assign groups (2 children) to work at particular stations. If so, decisions as to rotation routines to new stations must be instigated. Teachers may, however, permit children to work where they please. Children will often "group themselves" and will go and work where space is available.

Final Activity: Instructional Objective A

Choose and join three balances. Have a travelling beginning leading into the first balance, and a travelling finish leading away from the last balance practice.

"Go to your station (or go to a piece of apparatus) and practise the balances you've learned today".

Objective A is met with children completing a sequence of three different balances. Complete a start and a finish.

Sequences should be written out in notebooks.

The remaining 1/3 of the class should be spent on exploration of apparatus.

Children may try their sequences or parts of their sequences on apparatus and should be encouraged to do so.

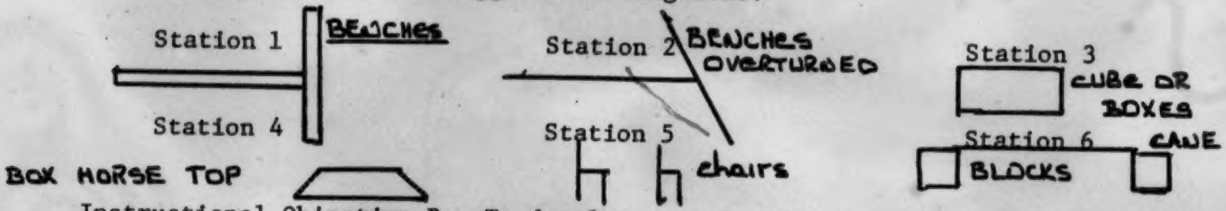
LESSON 2

Overview

It is suggested that in this lesson 1/3 of the time is spent on the floor, and 2/3 on the apparatus. Tasks set on the floor in Lesson 1 are repeated with the children on apparatus in this lesson. Teachers may want to choose two methods of task presentation:

- To the whole class. This involves stopping the class and verbally specifying the next task.
- To groups working at stations. This involves the teacher rotating to groups, giving a task, and completing the rotation by coming back to groups to evaluate responses.

These objectives will be met when children demonstrate a completed sequence. Starts and finishes may be on the floor. As well, some parts of the three balances may be on the floor. The summary of the lesson follows. Introduction - Exploration on apparatus; Movement Development - Skill developed emphasizing arms, legs, whole body; Final Activity - Sequences - three balances joined by rolls and travels. Sequence has a start and a finish; exploration on apparatus.
Low Level Apparatus Suggested Arrangement:



Instructional Objective B: To develop an individual sequence of at least three balances on benches or other low-level apparatus. Each balance must be different in body bases used to support weight and in body shape assumed.

Sub-Objectives:

- Development of skill in balancing on apparatus emphasizing body parts - legs, arms, large body parts.
- Development of skill in adjusting free body parts in balance situations.
- Development of skill in making shapes.
- Development of ability in using speed changes to move into and out of balances.

- Development of skill in reducing bases used to balance, securing and maintaining equilibrium.

Equipment: Benches, mats, box horse tops, skittles and canes, boxes.

Introductory Activities:

1. Exploration of apparatus. Travel about the gym going under, around, over on apparatus.
2. Frozen tag on the apparatus. Four children are it. They tag children who must go to the nearest piece of apparatus and freeze in a shape either on apparatus entirely, or partly on. "Free" children "unthaw" frozen ones by going around, over or under them. (5 minutes)
3. Practise floor sequences from last class. (5-7 minutes)

Movement Development	Teaching Suggestions
On the apparatus, "Be still on one foot. Then try the other foot. Where can you place free body parts?"	The initial 3 tasks develop skills on apparatus emphasizing legs. The next 4 tasks emphasize legs and the next 2 tasks emphasize whole body.
"Be still on two feet. Where are your free body parts?"	
"Move to a new place on apparatus. Try these balances again".	Teachers may have children work through tasks in all areas (arms, legs, whole body) before rotating to a new piece of apparatus, or may wait until sequences have been developed.
"At different places on your apparatus, practise being still, using arms and legs. Try different combinations".	
"Balance on four parts. What shapes can you make?"	Stress smoothness between balances, appropriate linking actions.
"Gradually remove one part so you are on three . . . now two".	
"Can you try new shapes, and reduce the number of parts?"	
"Try again, but practise doing this quickly, then slowly".	The concept of speed changes is introduced here. It will be developed in later lessons.
"Now, be still on large body parts. practise spreading out and curling up, and not losing your balance".	

Movement Development	Teaching Suggestions
"Balance on large parts . . . move into a balance on a new large part".	Stress using little space in travelling between balances.
"How did you move? Try joining (moving) balances in different ways".	The concept of linking or joining is introduced here. Rolling-type or travelling-type actions can be used. Rolling-type includes (forward, backward, log rolls) and travelling actions include (run, walk, skip, gallop and hop).
"Now add a third balance to make a sequence of three balances on apparatus".	

Final Activity: Instructional Objective B

"How many different ways and where can you mount your apparatus, then leave your apparatus?"	Objective B is accomplished when children have a sequence using apparatus of: 1. Three or more balances 2. Joining actions (travels or rolls) between each balance 3. Start (mount) and finish (dismount).
"Add your best mount (start) and your best dismount (finish) to your sequence".	
"Practise your sequences".	Children should write sequences out. This enhances "accountability", performance, and integration.

LESSON 3

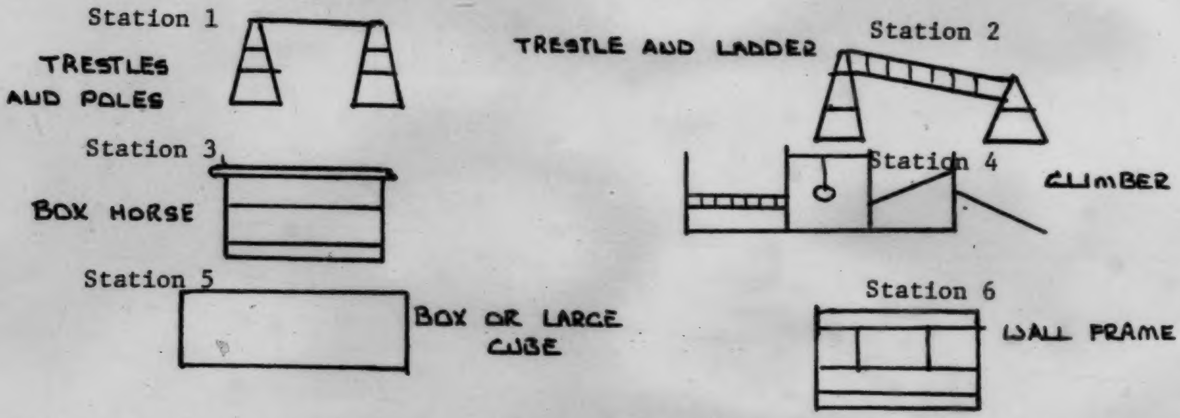
Overview

This lesson should be structured to include 1/3 time on the floor and 2/3 time on apparatus. Floor work in this lesson includes activities that lead children to explore in greater detail, three aspects related to balance:

1. Arriving into balances and leaving balances.
2. The linking actions that can join balances.
3. Speeds and tensions that need to be used in sequence development.

Large apparatus includes climbers and attachments, trestles with poles and ladders, beams, and box horses. Mats may be used alongside apparatus but should serve to be used as part of the apparatus for development of sequences (and later routines). As many stations should be used as there are groups.

Teachers may set tasks by giving tasks to the whole class while groups are at apparatus stations, or by moving from group to group, assigning tasks, completing the rotation by returning and evaluating progress. The objective will be met when children complete a sequence on apparatus. The summary of the lesson follows: Introduction - Exploratory and tag movement development - skill development on apparatus, emphasizing arms, legs and whole body; Final Activity - Sequences on apparatus. Suggested Apparatus Arrangement: (may or may not include mats):



Instructional Objective C: To develop an individual sequence of at least three balances on large apparatus. Each balance must be different in body base used and body shape assumed.

Sub-Objectives: - Development of skill in arriving into and leaving balances on apparatus.

- Development of use of direction change in moving into balance.
- Development of "linking" actions that are used to join balances.

Equipment: Climber and attachments, trestles and poles, trestles and ladders, box horses, benches and boxes.

Introductory Activities: Shadow Activities: children travel about the gym (over, on, under and around apparatus) in pairs. The leader tries different balances. The "shadow" must copy.

Movement Development

(Floor work)

"Run into empty spaces, jump, land and hold still your landing".

"Try landing on one foot, then the other".

"Run and try landing and see what shapes you can land in".

"Land, using your hands and feet to support you".

"Run, jump, land in a shape but this time hold the shape still for two seconds, then fall or roll into a new balance".

"Repeat, fall or roll into a travelling action".

"Play in your space. Balance, find a way to move to a second balance".

"Choose a balance. Move from this balance to a second balance, using a rolling-type action, then a travelling-type action, then an example of flight".

"Move in these ways from balance to balance in different directions. Then at different speeds".

Teaching Suggestions

The floor work (1/3 time) emphasizes:
- legs
- arms
- whole body

Children can be encouraged to "stay as far away" from everyone else as possible and to jump and land when no one is in that space.

Children's practice can include three types of actions to join balances:
- rolls (log rolls)
- forward and backward rolls
- flight - jumps and landings using:
  1 to 1 foot
  1 to 2 feet
  2 to 1 foot
  2 to 2 feet
- travels (run, walk, skip, gallop)

Movement Direction	Teaching Suggestions
"Now add a third balance to your sequence".	
"Move to your piece of apparatus. Find different places to run and jump onto. Then jump off from your apparatus".	Children now move to apparatus (2/3 of class time)
"Run, jump onto, into balances on either foot, then both feet".	
"Leave your apparatus, landing on either foot, both feet into balances".	
"At your apparatus, find different places to try different types of balances".	
"Balance with parts of your body on floor and parts on apparatus".	
"Transfer your weight from one balance to a new balance on the apparatus".	On large apparatus "suspending" is considered an aspect of balancing.
"Remember to try using each of rolling, travelling or flight-type actions to join the balance".	Teachers may follow these aims in developing quality in children's work on apparatus: 1. clarify the task 2. suggest range of possible solutions 3. assist children in selecting solutions 4. develop children's teachings 5. help children set up final sequence.
"Now add a third balance, trying to change your body shape and body bases used".	
"Try changing your direction and speeds between balances".	You may have children rotate to new apparatus to develop new sequences, or encourage expertise on one piece and have children stay.

Final Activity: Instructional Objective C

"Add your best mount and dismount to your sequence of three balances and practise your final sequence".

Objective C is accomplished when children complete a sequence on large apparatus involving:
- start (mount)
- three balances
- (linking actions between balances)
- finish (dismount)

Sequences should be written out in notebooks.

Demonstrations may be useful in that this tends to make children accountable . . . they strive for excellence if required to demonstrate. Demonstrations can either be:
- one to one
- one to a group
- one to the class
- half the class
- simultaneously to half the class

Sequences may be done partly on floor and partly on apparatus.

Evaluation of final sequences includes elements stressed in movement development:
- speeds
- directions
- appropriate linking actions
- clarity in body shape

LESSON 4

Overview

This lesson should include 2/3 floor time and 1/3 apparatus time. Work in this lesson includes activities that lead children to continue to develop skill in arriving into balances and leaving from balances. The focus is on the body actions of twisting, turning and falling that can be used to accomplish this. The reason for the emphasis on these is that balance is used as part of a routine that includes a rolling-type action, a travelling-type action and a flight-action. Balance therefore will lead into or out of one of these three and the way this is accomplished can be through twisting, turning, or falling actions. Final routines can include:

- a start
- balance; roll, flight and travel used in any order and in any number
- a finish

Routines should follow different pathways and make use of different directions (front).

Instructional Objective D: To develop an individual floor routine in which balance(s) is used in conjunction and flow with a rolling-type action, a travelling-type action, and an example of flight.

Sub-Objectives:

- Development of skill in using twists, turns, rolls, travels and flight to head into balance and out of balance.
- Development of understanding of bases of support and how size of bases affects balance.
- Develop a willingness to carry tasks through to completion.

Equipment: Mats, notebooks and pencils.

Introductory Activities: Exploration of different ways of rolling, travelling, or flight (see Lesson 2).

Movement Development	Teaching Suggestions
"Practise balancing on parts of your body on the same side - opposite side".	Twist: Selected body parts remain fixed and other parts turn.

Movement Development

"Join your best type of balance from each type by twisting, turning, then falling".

"What different body parts can you arrive on from different types of balances?"

"Balance, then leave this balance by twisting into a roll . . . into a fall".

"Now travel about the gym. Jump, land (flight) using 1 foot to 1 foot, 1 to 2, 2 to 2, 2 to 1 foot".

"Hold the landing, then roll or fall by twisting".

"Repeat, choose your best flight, land, roll into a balance this time".

"Try three new types of flight, travel and roll to add to a balance. This time add turns to join each".

Teaching Suggestions

Turn: The whole body rotates to face a new direction.

Fall: The whole body is lowered without control to the floor; hands or other body parts are used to break the fall.

Routines involve the combinations of "unlike" gymnastics into movement sentences.
e.g. rolls and balance(s),
flight and travel.

Encourage:
- twists, turns and falls
- change of direction and pathways.

Final Activity: Instructional Objective D

"Add as many examples of each type as you want. Make a routine of:
- start
- roll(s)
- balances
- flight
- travel
- finish".

Objective D is accomplished when children complete a floor routine.

Routines should be written out in notebooks.

LESSON 5

Overview

This overview should be structured to include 1/3 time on the floor, 2/3 time on apparatus. Floor work continues to draw upon spatial (directions used and pathways followed) and dynamic (speeds and tensions) components of movement to add to the development of balance used in relation to other gymnastics actions.

Low-level apparatus choice and arrangement may be made by children in this lesson if children have demonstrated ability to handle this. This is done at the start of class. The summary of the lesson follows. Introductory Activities - Practice of floor routines (lesson 3); Movement Development - Development of directional and speed changes, moving in and out of balances, and between balances, and rolls, travel and flight; Final Activity - Development of speed and directional changes in joining balances with rolls, travel and flight.

Instructional Objective E: To develop an individual routine on benches, or other "low-level" apparatus. Each balance must be different in body bases used to support weight, and body shape assumed.

Sub-Objectives:

- Development of proper use of space around apparatus.
- Development of skill in arranging and using apparatus.

Equipment: Benches, mats, boxes, low beams, box horse tops, skittles and canes, notebooks and pencils.

Introductory Activities: Balance on and near apparatus, practice using different body parts on the floor while other parts are on the apparatus. Review and practise floor routines established in Lesson 3.

Movement Development	Teaching Suggestions
"Approach your apparatus in one direction and leave it in another".	

Movement Development	Teaching Suggestions
"Practice different travels in approaching and mounting your apparatus, then different travels leaving it". "Mount your apparatus in slow motion - then quickly". "What type of action seems to naturally follow a 'slow-motion' mount?"	This lesson focuses on developing effort-quality in children's work. By varying and adjusting speeds and tensions, a start in developing quality is given. Allow for much exploration of this idea in this lesson.
"Practise different actions following your mount". (roll, flight, etc.).	Reminders to children to clarify the shapes used in balances as well as use of different body parts will need to be given.

Final Activity: Instructional Objective E

"Develop a routine using your apparatus. Your routine must involve: - start - one or more roll - one or more travel - one or more types of flight - one or more balances - finish".	To help children select responses, task cards with diagrams or descriptions of possible responses may be useful.
"Your routine should include: - changes of directions and speeds - times when you are on and off apparatus.	Objective E is accomplished when children complete a routine on low-level apparatus. Routines should be written out in notebooks, with some indication where actions are done quicker, and slower.

LESSON 6

Overview

Floor work should constitute 1/3 time, and apparatus work 2/3 time. This lesson is designed to be the "climax" of children's individual work involving balance. The remaining two lessons will develop relationship ideas.

The apparatus used in Lesson 6, its arrangement and deployment, are outlined in Lesson 3. Discussion with children of possible routines prior to the activity sessions, and demonstrations by children during and towards the end of class will help consolidate learning. The overview of the lesson follows. Introductory: Frozen Tag Activity; Movement Development: Discussion of possible routines development; Final Activity: Final routine developed.

Instructional Objective F: To develop an individual routine on large apparatus. Balance is used in conjunction and flow in a rolling-type action, travelling-type action, and example of flight.

Sub-Objectives: - Development of skill in use of speeds, directions and pathways in arriving into and leaving balances and apparatus.

Equipment: Climbers and attachments, benches, trestles and ladders, trestles and poles, box horse, beams, notebooks and pencils.

Introductory Activities: Exploration on apparatus.

Movement Development	Teaching Suggestions
"Where on the apparatus is it best to perform travels . . . rolls . . . flight . . . balance?"	Sit children down together to discuss the routine possibilities.
"How many different ways could you mount the apparatus, dismount and get on and off during your routine?" What shapes have you used in the past in your routines?"	Children have developed routines (Lesson 4) and are familiar with the components and the use of related concepts (speeds, directions and pathways) from the work in Lessons 4 and 5. This discussion should help children form a final

Movement Development	Teaching Suggestions
"What type of speed will you want to use in your routine?" "What kind of pathways and direction?"	routine. Teachers may feel it appropriate for children to write the routines out in a notebook rather than discussion and before the movement development.
	Objective F is complete when children have developed a routine on large apparatus.
	Demonstrations: - 1 child to 1 child - 1 child to a class - 1 child to a group - ½ the class to ½ the class

Final Activity: Instructional Objective F

"Choose and practise a final routine, be ready to demonstrate before the class ends".	Objective F is accomplished when children have completed a floor routine on large apparatus.

LESSON 7

Overview

This lesson is designed to have children work on the floor to produce a visually aesthetic and a challenging floor routine with a partner. Initially a partner sequence (emphasizing balance) is produced. The lesson culminates in the production of a partner routine. The following components are explored individually in the movement development part of the lesson:

- Matching - two people perform an action simultaneously while beside each other, or with one behind the other.
- Mirroring - actions performed simultaneously with partners facing each other and "mirroring" the action.
- Negotiating of balances - one person balances in a shape that a partner must go under, around, over, or through.
- Assisted balances - one person takes part or all of a partner's weight.

The consolidation incorporates the developed separate partner components into sequences and routines. Here the partner components are applied with children combining selected aspects of their individual work. An overview of the lesson follows. Introductory Activities: practise individual sequences and moves; Movement Development: Development of partner components; Final Activity: Sequences and routines.

Instructional Objective G: To develop a sequence with a partner on the floor in which two people select or combine aspects of individual floor sequences. Floor sequences must demonstrate matching or mirroring, negotiating of balances, and assisted balances.

Sub-Objectives: - Development of an ability and willingness to discuss with and perform with a partner.

Instructional Objective H: To develop a routine with a partner on the floor in which two people select and combine selected aspects of individual floor routines. The partner routine must demonstrate balances used in conjunction and flow with rolling-type actions and examples of flight.

Sub-Objectives: - Development of an ability and willingness to discuss with and perform with a partner.

Equipment: Mats, notebooks and pencils.

Introductory Activities: Practise individual floor sequences and routines.

Movement Development

"Who can demonstrate how to match actions . . . mirror actions?"

"Choose your three best balances. Go with your partner and practise matching and mirroring".

"Try to practice having body parts touching or close together . . . or far apart when matching or mirroring".

"Come back in. Who can make a balance that your partner can go under . . . around . . . through . . . over?"

"Can you make a sequence where you continuously change who 'negotiates' and who makes the balance?"

"Go out and practise. Come back. Can you develop a sequence with your partner using balancing in which you use:
- matching-mirroring
and
- negotiating?"

"Go out and practise".

"Come back in. Who can take balance part of their partner's weight? Try all of your partner's weight".

"Practise different possibilities".

"Come in. You are going to develop a sequence using all your partner's components we

Teaching Suggestions

Discuss with children the four partner components to be developed. This can take the form of a question-answer period.

Partners may be assigned by the teacher, or children become the partner of the "closest person" to them at a particular point in time in the class.

The movement development part of the lesson alternates between discussion (of the four partner components) and practice.

Assisted Balance

Teachers can help clarify the tasks and lead children to select appropriate response in this component by following this format in teaching children.

1. Experiment with different ways of gripping.
2. Experiment with A and B close together, gripping, then moving apart, maintaining the grip.
3. A and B stand apart, fall together, with hands meeting.
4. A and B stand together, in contact. A or B bends and

Movement Development

have practised. Discuss with your partner, then develop your sequence. When it is ready, write it down and be ready to demonstrate".

Teaching Suggestions

rises, leans backwards or sideways.

5. A and B in contact. A or B lowers the other to the ground - then lifts.
6. A or B assume a balance. The other places part of his weight on the partner - part on the floor.
7. A or B assume a balance. The other places all of his weight on partner.

Final Activity: Instructional Objectives G and H

"Take parts of your individual routine and explore ways of:
- matching-mirroring
- negotiating
- assisting".

"Try these three with each of the parts of the routine:
- balances
- flight
- rolls
- travels".

"Decide how you and your partner will develop a routine together".

"Practise and be ready to demonstrate".

Routines with a partner include:
- start
- finish
- examples of rolls
- examples of flight
- examples of travel
- examples of balance
- examples of partner components.

Objectives G and H are met when a partner sequence and routine has been made.

LESSON 8

Overview

This final lesson helps children to develop a visually aesthetic routine with partners on selected pieces of apparatus. Choice of apparatus may be left to children. Children's floor routines developed last lesson can be adapted and applied on apparatus. A summary of the lesson follows. Introductory Activities: Review of floor routine; Movement Development and Final Activity: Partner routines.

Instructional Objective I: To develop a routine with a partner on apparatus. The partner routine must demonstrate balance used in conjunction and flow with rolling-type actions, travelling-type actions, and examples of flight.

Equipment: Large and low-level apparatus.

Introductory Activities: Practice routines developed last class.

Movement Development

"Discuss with your partner:
- where you will start-finish
- what directions, pathways and speeds you will use
- what types of rolls, flight, travels and balances you will use
- what types of partner activities (matching, etc.) you will use".

Teaching Suggestions

Discuss with children in the form of questions-answers to help them decide how best to develop a routine.

Final Activity: Instructional Objective I

"Develop and practise a routine. Be ready to demonstrate to the class your final product".

Objective I is complete when children complete a routine on apparatus with one other person.

APPENDIX C

UNIQUE COMPONENT OF CURRICULUM B: THEME MATERIAL

APPENDIX C

UNIQUE COMPONENT OF CURRICULUM B: THEME MATERIAL

BALANCE

The theme material provides the content for teachers to choose from in the development of lesson plans. Theme material is provided for Floor Work and for Apparatus Work. The teacher should choose and develop the theme material that best meets each of the 9 instructional objectives - the sequences and routines. Suggestions for the teacher are included following the theme material to help guide teachers toward helping children achieve these objectives.

Theme Material

Floor Work	Apparatus Work
- Balances, emphasizing arms.	Balances on apparatus, emphasizing arms.
- Balances, emphasizing legs.	Balances on apparatus, emphasizing legs.
- Balances on named parts (e.g. legs, seat).	Balances on apparatus, on named parts.
- Balances on large body parts . . . small parts.	Balances on apparatus on large and small body parts.
- Balances on matching parts . . . non-matching parts.	Balances on apparatus on matching, then non-matching parts.
- Balances on numbered parts.	Balances on apparatus on numbered parts.
- Balances on a large number of parts, then gradual reduction of parts used . . . quick reduction of parts used . . . maintaining balance.	Balances on apparatus on a large number of parts with gradual reduction of parts used to support weights.
- Balance on body parts with emphasis on what free body parts are doing while the body is balancing.	Balances on apparatus on body parts with emphasis on free body parts, what they are doing while the body is balancing.
- Balance in different shapes (curled, long, wide, twisted).	While on apparatus, balance in different shapes.

Floor Work	Apparatus Work
- Balances in shapes, then twist, turn, tip and fall in new shapes.	Balances on apparatus in shapes using twists, turns, tips and falls to move to new balances.
- Balances on selected parts, twist, turn, tip or fall to rolling-type actions.	Balances on apparatus using twists, turns, tips and falls to move to rolling-type actions.
- Develop rolling-type actions leading into different balances.	While on apparatus, develop actions leading into balances.
- Develop travelling-type actions (e.g. walk, run, skip) into different balances.	While on apparatus, develop travelling-type actions leading into balances.
- Develop different types of flight into different balances.	On apparatus, develop different kinds of jumps into balances.
- Emphasis on achieving clarity of shapes in arriving into balances.	While on apparatus strive to achieve clarity in shapes.
- Balances with emphasis on speed changes in twisting, turning, tipping or falling into new balances . . . into rolling-type actions.	Balance on apparatus and develop the use of different speeds to twist, turn, tip and fall into new balances.
- Emphasis on speed changes in travelling, flight, on rolling-type actions into balances.	While on apparatus, develop use of speed changes in travelling, jumping or rolling to balance.
- Emphasis on directional changes in moving into and leaving balances using rolling, travelling and flight.	Development of balances with some parts on floor and others at different places on apparatus.
- Development of individual sequences.	Development of a variety of means (approaches and balances) of arriving onto and balancing on apparatus.
- Development of individual routines.	
- Development of partner sequences.	Emphasis on different directions and pathways used in the approach.

Floor Work

- Development of partner routines.

Apparatus Work

Development of a variety of means of leaving apparatus (tipping, turning off, twisting off, falling off, travelling off, rolling off.

Emphasis on different directions and pathways used in leaving.

Development of ways of continuously moving onto and off apparatus.

Development of individual sequences on low-level apparatus.

Development of routines on low-level apparatus.

Development of sequences on large apparatus.

Development of routines on large apparatus.

Development of partner routines on apparatus.

Teacher Suggestions

A. Floor Work and Apparatus

- Each class should have both floor work and apparatus work. A suggested time-line is 1/3 floor work, 2/3 apparatus work.
- Tasks selected to develop floorwork skill may be used to develop skill on apparatus.
- On the floor, or in using mats, children should be "scattered", occupying all the general space on the floor.
- With apparatus, teachers should have as many groups working as there are stations. Each station has a particular piece(s) of apparatus. Between 5-10 stations are often used (see Introduction).
- Children may work extensively at one station each class or rotate to new stations. Systems for rotation, as well as systems for the lifting,

carrying and arranging of apparatus by children, can be set by the teacher.

- Teachers may give the task to the whole class, or may give a task to one group, then move onto a second group to give a task to the next work. The latter teaching strategy allows for a teacher to assign tasks according to the progress of individuals. The teacher completes the rotation by checking on or evaluating progress on the tasks set.

- Floorwork leads children to develop ways of combining balances, this through use of "linking" actions such as rolls, travels and flight. The objective is for a child to develop a sequence of at least three balances, appropriately linked together and using a start and finish.

- Floor work also leads the child to develop a routine involving a start, finish, rolls, travels, balances and flight.

- Sequences and routines developed on the floor are adjusted and adapted to be placed on apparatus. It is good for the same type tasks developed on the floor to be developed on apparatus before sequences and routines are tried.

- Mats can be used as part of the apparatus to help the child develop sequences or routines.

B. Sequence and Routine Development

- Children should write out or describe pictorally, their final pieces of work. This can be done by having the children bring to, or keep in the gym, a notebook and pencil.

- The teacher may follow these guidelines in leading children to develop and achieve excellence in sequences and routines on floor and apparatus:

  1. Clarify the task by setting additional tasks.

  2. Suggest range of possible solutions - what are the possibilities?

  3. Assist children in selecting solutions.

  4. Develop children's technique.

  5. Help children determine final sequence and routine.

- Prior to children developing sequences and routines on the floor and apparatus, the teacher should sit the children down and discuss the range of possibilities. Allow the children to verbalize how they are going to achieve their final pieces of work.

  Sequences - start - three (or more balances - finish with appropriate linking actions). Can show directional, speed and pathway change.

Routines - start - balances - rolls - travels - flight - finish, can show directional, speed and pathway changes.

- Teachers may prepare task cards that describe, either by pictures or using sentences, the possible solutions to tasks and proper techniques.

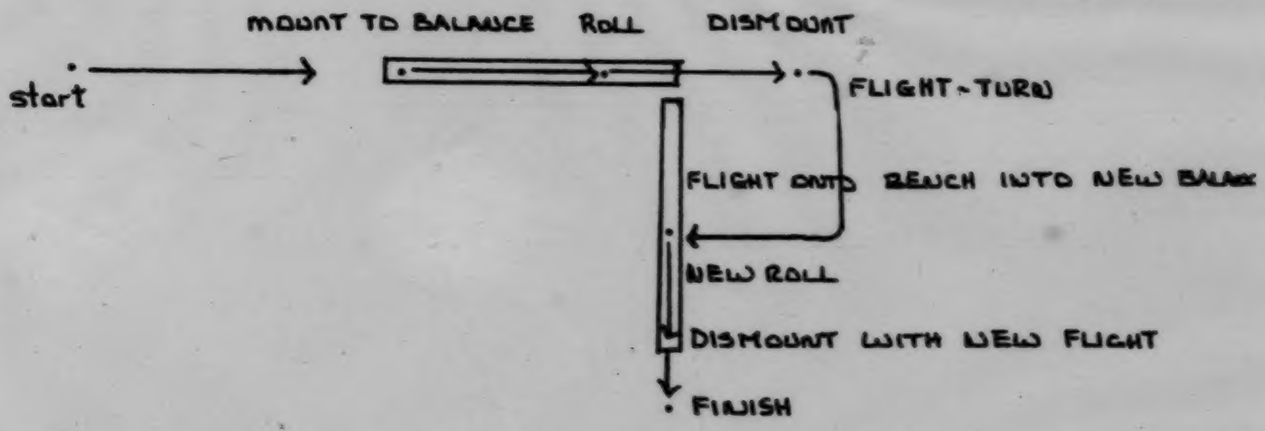
- Children should be asked to continually verbalize what their bodies are doing in their floor work, apparatus work, and in sequences and routines (e.g. What my free body parts are doing, where they are pointing, etc.; What shape am I in?

C. Procedural Considerations

- Apparatus can be kept on the sides of the gym and children can lift, carry and arrange apparatus according to your specifications, or according to children's choice.

- A "quiet", businesslike atmosphere is required for effective results.

- Apparatus should be spaced out in the gym to permit children to use lots of floor space in performing their routines. An example might be a routine on low apparatus - bench.



D. Partner Work

- Teacher and children should discuss the intent of partner work prior to partner work. It is the production of a visually aesthetic and challenging sequence or routine performed with one other person.

- Children should be given tasks to help them explore at least three partner-type ideas. (From these "ideas" children choose and adapt ideas, then decide how best to combine them into a sequence or routine with a partner).

Three types of partner ideas:

1. matching/mirroring - copying a partner's action, either side by side, one behind the other, or facing each other.

2. negotiating balances - going under, around, over or through the balance shapes made by a partner. This can develop into a continuous interchange of balances and negotiation.

3. assisted balance - one person takes part or all of a partner's weight.

Children select ideas explored from these three and incorporate them into a sequence and apparatus developed with a partner. The components of the sequences and routines remain the same as in individual work.

APPENDIX D

UNIQUE COMPONENT OF CURRICULUM C: SAMPLE LESSON

APPENDIX D

UNIQUE COMPONENT OF CURRICULUM C: SAMPLE LESSON

LESSON 1

Overview

Time spent on the floorwork part of this lesson should be approximately 2/3 of the class period. The last 1/3 should be used for apparatus work. Apparatus should be set up by the children about the gym. As many stations as you will have groups of children should be set up (suggested number: 5 to 10). The tasks in the Movement Development part of the lesson are the sequence of questions that you present to the class as tasks to be solved. The following gives a summary of the lesson: Introductory Activities - Exploration and Shadow; Movement Development - Floor Work, development of a sequence using directional and speed changes; Final Activity - Free exploration on apparatus at the end of the lesson upon completion of instructional objective A.

Instructional Objective A: For the child to develop an individual floor sequence of at least three balances, each balance different in body bases used to support weight and body shapes assumed.

Sub-Objectives:

- Development of skill in balancing on legs, arms, and large body parts.
- Development of skill in moving from weight-bearing to balance positions, adjusting body bases and securing equilibrium.
- Development of willingness to listen to problems, to think about them and seek better ways of solving them.

Equipment: Benches, mats, box horse tops, skittles and canes, boxes, notebook and pencil.

Introductory Activities:
(3-5 minutes)

1. Free exploration on apparatus.
2. Children travel about the gym using various pieces of apparatus to assist in going over, under, around, or on.
3. Children travel about the gym going under, around, over, or on apparatus but gradually increase the time spent under, around, over, or on apparatus.

Movement Development

"Be still on one foot".

"Where can you place (various) free body parts such as your head, free leg?"

"Place your head low, to the side".

"Practise being still on the other foot . . . what are your free body parts doing?"

"Be still on two feet. What are your free body parts doing?"

"How many different ways can you be still, using hands and feet?"

"Show how you can lift different body parts high when still".

"Be still on two parts, one of which must be an arm or hand".

"Be still on three (four, then five)".

"Use at least one arm or hand here".

"Be still on large body parts like tummy, back, head".

6 "Where are you putting your free body parts?"

"Be still on these large parts. Be spread out and gradually bring body parts close together so you are still and in a curled shape. Practise different possibilities".

"Be still on four (then five) parts. Decrease the parts that are holding you. Keep your body still throughout".

Teaching Suggestions

The initial 6 tasks develop skills emphasizing feet. The next 3 tasks emphasize arms and the next 4 tasks emphasize whole body.

To develop control in holding the body weight over different body bases and body parts, the following points should be presented to the children while they are attempting the tasks.

1. Body weight over base of support
2. "Free" limbs can maintain support
3. Concentration is developed by focusing on points on wall or floor
4. Use just enough bodily tension and hold position.

Children may be scattered in general space. The teacher can move freely among the children, setting tasks.

Sequences - involve combining two, three or more "like" gymnastics actions together into a movement sentence.

Movement Development

"Choose your best balance . . . add a second balance to it, then a third".

"Try joining three new balances together but this time use rolling actions and travelling actions to join your three balances".

Teaching Suggestions

Teachers may either assign groups (2 children) to work at particular stations. If so, decisions as to rotation routines to new stations must be instigated. Teachers may, however, permit children to work where they please. Children will often "group themselves" and will go and work where space is available.

Final Activity: Instructional Objective A

Choose and join three balances. Have a travelling beginning, leading into the first balance, and a travelling finish leading away from the last balance practice.

"Go to your station (or go to a piece of apparatus) and practise the balances you've learned today".

Objective A is met with children completing a sequence of three different balances. Complete a start and a finish.

Sequences should be written out in notebooks.

The remaining 1/3 of the class should be spent on exploration of apparatus.

Children may try their sequences or parts of their sequences on apparatus and should be encouraged to do so.

APPENDIX E

OUTLINE OF EXPLANATION AND QUESTIONS FOR CONSTRUCT VALIDATION OF CURRICULA

APPENDIX E

OUTLINE OF EXPLANATION AND QUESTIONS FOR CONSTRUCT VALIDATION OF CURRICULA

The three curricula that you have agreed to assess are designed to be used by classroom teachers at the Grade 4 level. Teachers who are non-specialists in the field of elementary school physical education will be using the curricula over a four week period, teaching approximately two lessons per week. Each curriculum is designed to represent the type of resource most often used in elementary school physical education.

The curriculum entitled Curriculum A is detailed and specific. It includes theme material on balance arranged in lesson plan format. Curriculum B is less detailed. It provides the theme material on balance from which the teacher must design the lesson plans. Curriculum C is the least detailed curriculum. It includes no theme material, but suggests only a typical lesson plan that a teacher might refer to in developing her own lesson plans on the theme of balance. All three curricula include identical sections entitled Foreword and Introduction. These sections provide information related to the theme of balance that teachers can refer to in developing and teaching their lessons. The three curricula have been organized as follows:

Curriculum A	Curriculum B	Curriculum C
FOREWORD	FOREWORD	FOREWORD
A. The Concept of Balance	A. The Concept of Balance	A. The Concept of Balance
B. The Purpose and Place of Balance	B. The Purpose and Place of Balance	B. The Purpose and Place of Balance
C. The Components in Balance	C. The Components in Balance	C. The Components in Balance
D. The Development of Tasks in Teaching Balance	D. The Development of Tasks in Teaching Balance	D. The Development of Tasks in Teaching Balance
E. Apparatus Work and Balance	E. Apparatus Work and Balance	E. Apparatus Work and Balance
F. Partner Work and Balance	F. Partner Work and Balance	F. Partner Work and Balance
G. The Child and Balance	G. The Child and Balance	G. The Child and Balance
H. Summary	H. Summary	H. Summary
INTRODUCTION		
A. Goals	A. Goals	A. Goals
B. Instructional Objectives	B. Instructional Objectives	B. Instructional Objectives
C. Development of the Theme Material	C. Development of the Theme Material	C. Development of the Theme Material
THE LESSON PLANS	THEME MATERIAL	SAMPLE LESSON PLAN
Evaluation	Evaluation	Evaluation
Definitions	Definitions	Definitions
Bibliography	Bibliography	Bibliography

During the research I will be conducting, three samples of teachers will be assigned a selected curriculum. Each sample of teachers will use their particular curriculum for a time period of approximately four weeks. Before each sample begins their instructional period, I will administer two tests to assess, individually, the teacher's knowledge and attitudes as they apply to elementary school physical education gymnastics and the theme of balance. After the teachers complete their instructional period, the same tests will be re-administered to determine what, if any, change has occurred in the two variables of knowledge and attitude. The intent is to determine the relationship of selected design of curriculum to these two variables. It is important to specify that the focus will be on the classroom teacher, one with no special training or experience in elementary school physical education.

Your assessment of these three units is a vital step in my research process. The units must be reviewed and assessed by both classroom teachers, and by physical education specialists who are knowledgeable of the topic, to ensure that the curricula are valid and understandable.

I have included a questionnaire that I trust will be useful in directing your review and assessment. I look forward to sitting down with you to discuss your reactions.

TEACHERS

ASSESSMENT OF CURRICULA

Questions have been provided to help direct your assessment of the three curricula (Curriculum A, Curriculum B, and Curriculum C). Your assessment of these curricula is a vital step in determining the usefulness of each curriculum. The questions are designed to help you look at the three curricula from the perspectives of clarity of the language used and overall logic in each arrangement of the curricula. As a researcher preparing to use these curricula, it is important to know if you feel a classroom teacher could understand the theme and could develop the theme of balance with Grade 4 children from use of these curricula.

CLARITY OF LANGUAGE USED IN THE THREE CURRICULA (A,B,C) - FOREWORD AND INTRODUCTION

1. Indicate how you feel about the clarity of the language used in each of the following sections of the three curricula (Curriculum A, B and C). Check and comment.

	Unclear	Clear	Too Detailed
FOREWARD			
The Concept of Balance	___	___	___
The Purpose and Place of Balance	___	___	___
The Components of Balance	___	___	___
The Development of Tasks in Teaching Balance	___	___	___
Apparatus Work and Balance	___	___	___
Partner Work and Balance	___	___	___
The Child and Balance	___	___	___
Summary - Expectations by the Teacher for the Child	___	___	___

Comment:

	Unclear	Clear	Too Detailed
Goals	___	___	___
Instructional Objectives	___	___	___
Development of the Theme Material	___	___	___

Comment:

2. Indicate how you feel about the clarity of language used in the lesson plans in Curriculum A.

	Unclear	Clear	Too Detailed
Lesson 1	___	___	___
Lesson 2	___	___	___
Lesson 3	___	___	___
Lesson 4	___	___	___
Lesson 5	___	___	___
Lesson 6	___	___	___
Lesson 7	___	___	___
Lesson 8	___	___	___

Comment:

3. Indicate how you feel about the theme material provided in Curriculum B. Is the language clear?

CLARITY OF LANGUAGE USED IN THE TEACHING SUGGESTION

1. Please indicate your views on the Teaching Suggestions given in Curriculum A and Curriculum B.

TEACHING SUGGESTIONS

	Curriculum A		Curriculum B	
	Satisfactory	Not Satisfactory	Satisfactory	Not Satisfactory
Clarity of Language	___	___	___	___
Total Amount of Suggestions Included	___	___	___	___
Potential in Assisting Teachers to Develop the Theme of Balance	___	___	___	___

Comments:

OVERALL ARRANGEMENT OF THE THREE CURRICULA (CURRICULUM A, B, AND C).

1. You have assessed the clarity of language used in each section in each curricula. Could you now indicate your feelings about the overall arrangement of the particular sections in each curriculum? Is the arrangement of the particular sections in each curriculum too complicated?

	Too Complicated	Arranged Just Right	Too Simple
Curriculum A:			
The arrangement of the sections in the Foreword and Introduction	___	___	___
The arrangement of the lesson plans	___	___	___
Curriculum B:			
The arrangement of the sections in the Foreword and Introduction	___	___	___
The arrangement of the theme material	___	___	___

2. Comments would be appreciated here on your general feelings as to the overall arrangement of Curriculum A, Curriculum B, Curriculum C.

Curriculum A:

Curriculum B:

Curriculum C:

3. Write comments, expressing your feelings about each of the curricula, under each of these stems.

Understanding the introductory material is . . .

The parts of the Introduction that are clearest are . . .

The parts of the Introduction that are most useful are . . .

The parts of the Introduction that are not clear are . . .

The parts of the Introduction that would not be very useful are . . .

Understanding what is expected of me as a teacher is . . .

Developing a unit and lessons using Curriculum B would be . . .

Developing a unit and lessons using Curriculum C would be . . .

The objectives of the curriculum which are the development of nine final pieces of work are . . .

Developing skills in balance through Curriculum A is . . .

Developing skills in balance through Curriculum B is . . .

The "readability" of the curricula is . . .

The teacher's understanding of the concept of balance might be . . .

The children's understanding of the concept of balance might be . . .

The arrangement of material in Curriculum B is . . .

The arrangement of material in Curriculum C is . . .

It would be easy to use Curriculum A because . . .

I would have difficulty using Curriculum B and C because . . .

4. Additional Comments:

I thank you for your time spent in helping in this study, your interest and assistance is greatly appreciated.

Bernie Potvin

APPENDIX F

VALIDATORS

APPENDIX F

VALIDATORS

CURRICULUM CONSTRUCT VALIDATORS - TEACHERS

1. Mr. Dale Ripley
   Vice-Principal
   St. Frances School
   Edmonton, Alberta

2. Mr. David Kitz
   Classroom Teacher
   Delwood Elementary School
   Edmonton, Alberta

3. Ms. Le Larsen
   Graduate Student - Elementary Education
   University of Alberta
   Edmonton, Alberta

SPECIALISTS - VALIDATORS

1. Dr. Clive Padfield
   Chairman
   Department of Movement Education
   University of Alberta
   Edmonton, Alberta

2. Professor Chris Marshall
   Instructor
   Faculty of Education
   University of Alberta
   Edmonton, Alberta

3. Marnie Rutledge
   Instructor
   Department of Movement Education
   University of Alberta
   Edmonton, Alberta

4. Sally Carline
   Teacher
   Dovercourt Elementary School
   Edmonton Public School Board
   Edmonton, Alberta

CURRICULUM CONTENT VALIDATORS - SPECIALISTS

1. Dr. David Sande
   Faculty of Education
   Department of Elementary Education
   University of Alberta
   Edmonton, Alberta

2. Neil Garvie
   Graduate Student (Ph.D)
   Faculty of Education
   University of Alberta
   Edmonton, Alberta

3. Doreen Ryan
   Physical Education Consultant
   Edmonton Separate School Board
   Edmonton, Alberta

4. Mike Hay
   Physical Education Consultant
   Edmonton Public School Board
   Edmonton, Alberta

TEACHER VALIDATORS OF FINAL ATTITUDE QUESTIONNAIRE

NON-SPECIALIST TEACHERS-VALIDATORS OF THE ATTITUDE QUESTIONNAIRE AND PERCEIVED KNOWLEDGE QUESTIONNAIRE

1. Miss Janet Bown
   Teacher
   Covenant Community Training Center
   Edmonton, Alberta

2. Mrs. Joan Potvin
   Teacher
   Braemar Elementary School
   Edmonton Public School Board
   Edmonton, Alberta

3. Mrs. Brenda Neszmery
   Teacher
   Kitaskinaw Elementary
   County of Parkland

4. Mrs. Grace Faber
   Teacher
   Glendale Elementary
   Edmonton Public School Board
   Edmonton, Alberta

SPECIALIST VALIDATORS - PERCEIVED KNOWLEDGE QUESTIONNAIRE

1. Professor Jan Vallance
   Instructor
   Faculty of Education
   University of Alberta
   Edmonton, Alberta

2. Professor Jan James
   Instructor
   Department of Movement Education
   University of Alberta
   Edmonton, Alberta

3. Professor Linda Thompson
   Instructor
   Department of Movement Education
   University of Alberta
   Edmonton, Alberta

4. John Kearns
   Graduate Student (Ph.D candidate)
   Elementary Education
   University of Alberta
   Edmonton, Alberta

APPENDIX G

OUTLINE OF EXPLANATION AND QUESTIONS FOR CONTENT VALIDATION OF CURRICULUM

APPENDIX G

OUTLINE OF EXPLANATION AND QUESTIONS FOR CONTENT VALIDATION OF CURRICULUM

The three curricula that you have agreed to assess are designed to be used by classroom teachers of the Grade 4 level. Teachers who are non-specialists in the field of elementary school physical education will be using the curricula over a four week period, teaching approximately two lessons per week. Each curriculum is designed to represent the type of resource most often used in elementary school physical education.

The curriculum entitled Curriculum A is detailed and specific. It includes theme material on balance arranged in lesson plan format. Curriculum B is less detailed. It provides the theme material on balance from which the teacher must design the lesson plans. Curriculum C is the least detailed curriculum. It includes no theme material, but suggests only a typical lesson plan that a teacher might refer to in developing her own lesson plans on the theme of balance. All three curricula include identical sections entitled Foreword and Introduction. These sections provide information related to the theme of balance that teachers can refer to in developing and teaching their lessons. The three curricula have been organized as follows:

Curriculum A	Curriculum B	Curriculum C
FOREWARD	FOREWARD	FOREWARD
A. The Concept of Balance	A. The Concept of Balance	A. The Concept of Balance
B. The Purpose and Place of Balance	B. The Purpose and Place of Balance	B. The Purpose and Place of Balance
C. The Components in Balance	C. The Components in Balance	C. The Components in Balance
D. The Development of Tasks in Teaching Balance	D. The Development of Tasks in Teaching Balance	D. The Development of Tasks in Teaching Balance
E. Apparatus Work and Balance	E. Apparatus Work and Balance	E. Apparatus Work and Balance
F. Partner Work and Balance	F. Partner Work and Balance	F. Partner Work and Balance
G. The Child and Balance	G. The Child and Balance	G. The Child and Balance
H. Summary - Expectations by Teachers for Children	H. Summary - Expectations by Teachers for Children	H. Summary - Expectations by Teachers for Children
INTRODUCTION		
A. Goals	A. Goals	A. Goals
B. Instructional Objectives	B. Instructional Objectives	B. Instructional Objectives
C. Development of the Theme Material	C. Development of the Theme Material	C. Development of the Theme Material

Curriculum A	Curriculum B	Curriculum C
THE LESSON PLANS	THEME MATERIAL	SAMPLE LESSON PLAN
Evaluation	Evaluation	Evaluation
Definitions	Definitions	Definitions
Bibliography	Bibliography	Bibliography

During the research I will be conducting, three samples of teachers will be assigned a selected curriculum. Each sample of teachers will use their particular curriculum for a time period of approximately four weeks. Before each sample begins their instructional period, I will administer two tests to assess, individually, the teacher's knowledge and attitudes as they apply to elementary school physical education, gymnastics and the theme of balance. After the teachers complete their instructional period, the same tests will be re-administered to determine what, if any, change has occurred in the two variables of knowledge and attitude. The intent is to determine the relationship of selected design of curriculum to these two variables. It is important to specify that the focus will be on the classroom teacher, one with no special training or experience in elementary school physical education.

Your assessment of these three units is a vital step in my research process. The units must be reviewed and assessed by both classroom teachers, and by physical education specialists who are knowledgeable of the topic, to ensure that the curricula are valid and understandable.

I have included a questionnaire that I trust will be useful in directing your review and assessment. I look forward to sitting down with you to discuss your reactions.

FOREWORD AND INTRODUCTION TO EACH CURRICULA

1. The Foreword and Introduction to each curriculum are designed to provide teachers with enough background information so they may be able to understand and develop the theme material in balance. The Foreword and Introduction are intended to help teachers understand and implement the lesson plans in Curriculum A, develop and implement the theme material in Curriculum B into lesson plans, and develop lesson plans from Curriculum C.

   Comment on each part in the Foreword and Introduction by indicating whether the information provided in that section is complete or not. (Check and comment)

	Not Complete	Complete	Too Much Included
FOREWARD			
The Concept of Balance	___	___	___
The Purpose and Place of Balance	___	___	___
The Components in Balance	___	___	___
The Development of Tasks in Teaching Balance	___	___	___
Apparatus Work and Balance	___	___	___
Partner Work and Balance	___	___	___
The Child and Balance	___	___	___
Summary - Expectations by Teacher for Children	___	___	___

Comments:

	Not Complete	Complete	Too Much Included
INTRODUCTION			
A. Goals	___	___	___
B. Instructional Objectives	___	___	___
C. Development of Theme Material	___	___	___

Comments:

2. In the Introduction there is a section entitled Development of the Theme Material. You have already commented in Question 1 about the completeness of the information in this section. This section is critical to those teachers who use Curriculum B and Curriculum C, they must be able to understand and use the information provided here to develop their own lessons. Please check and comment on the clarity of this section.

	Not Clear	Clear	Too Clear
Overview	___	___	___
Comment:			
Floorwork	___	___	___
Comment:			
Apparatus Work	___	___	___
Comment:			
Partner Work	___	___	___
Comment:			

SPECIALISTS

A. INTRODUCTION

Questions have been provided to direct your assessment of the three curricula (Curriculum A, Curriculum B, and Curriculum C). Your assessment of the content in each curricula, i.e. the lesson plans, or the theme materials, is one aspect that is vital. The questions direct you to look at the content from different perspectives, the breadth, the depth, and the appropriateness of the content. Secondly, your assessment of the organization of each is vital. The questions direct you to assess how clear is the language used and how logical in sequence the parts of the curricula (such as the Introduction, the Intended Learning Outcomes, etc.) are. Additional comments are welcomed at the end of the assessment sheet if the questions have failed to include a perspective which you might have and the questions did not provide.

B. ASSESSMENT

THEME MATERIAL

1. Have the three curricula included enough theme material to adequately develop the theme of balance? (Use a check mark and comment if appropriate).

	Not Enough	Enough	Too Much
Curriculum A Comment:	___	___	___
Curriculum B Comment:	___	___	___
Curriculum C Comment:	___	___	___

2. Is the theme material that is included understandable and sufficiently clear for teachers to develop the theme of balance? (Check and comment)

	Not Clear	Clear	Too Detailed
Curriculum A Comment:	___	___	___
Curriculum B Comment:	___	___	___
Curriculum C Comment:	___	___	___

INSTRUCTIONAL OBJECTIVES

1. Which of the nine Instructional Objectives should be retained and which should be eliminated? (Check and comment)

	Eliminate	Retain
Ins. Objective A	___	___
Ins. Objective B	___	___
Ins. Objective C	___	___
Ins. Objective D	___	___
Ins. Objective E	___	___
Ins. Objective F	___	___
Ins. Objective H	___	___
Ins. Objective I	___	___ ✓
	___	___

Comment:

2. Are there other Instructional Objectives that should be added?

INTENDED LEARNING OUTCOMES

1. Which of the Intended Learning Outcomes would you consider appropriate for Grade 4 children in terms of breadth? (Check and comment)

	Too Broad	**Appropriate**	**Too Narrow**
I.L.O. 1	___	___	___
I.L.O. 2	___	___	___
I.L.O. 3	___	___	___
I.L.O. 4	___	___	___
I.L.O. 5	___	___	___
I.L.O. 6	___	___	___
I.L.O. 7	___	___	___
I.L.O. 8	___	___	___
I.L.O. 9	___	___	___

Comments:

2. Are there Intended Learning Outcomes that should be added?

3. Are there Intended Learning Outcomes that have been included that you would eliminate?

CURRICULUM A

1. Each lesson plan used in Curriculum A contains sequentially arranged tasks that are intended to develop the particular objective for that lesson.

   a. Do the tasks follow logically, one after the other:

	Not Logical	Logical
Lesson 1	___	___
Lesson 2	___	___
Lesson 3	___	___
Lesson 4	___	___
Lesson 5	___	___
Lesson 6	___	___
Lesson 7	___	___
Lesson 8	___	___

Comment:

Have sufficient tasks been included to develop the theme of balance?

	Sufficient	Insufficient
Lesson 1	___	___
Lesson 2	___	___
Lesson 3	___	___
Lesson 4	___	___
Lesson 5	___	___
Lesson 6	___	___
Lesson 7	___	___
Lesson 8	___	___

Comment:

Will the tasks develop the theme of balance?

	Will Develop	Will Not Develop
Lesson 1	___	___
Lesson 2	___	___
Lesson 3	___	___
Lesson 4	___	___
Lesson 5	___	___
Lesson 6	___	___
Lesson 7	___	___
Lesson 8	___	___

Comment:

Do the tasks relate closely to the particular Instructional Objective that they purport to develop?

	Do Relate	Do Not Relate
Lesson 1	___	___
Lesson 2	___	___
Lesson 3	___	___
Lesson 4	___	___
Lesson 5	___	___
Lesson 6	___	___
Lesson 7	___	___
Lesson 8	___	___

Comment:

Is there sufficient challenge inherent in the tasks?

	Sufficient Challenge	Insufficient Challenge
Lesson 1	___	___
Lesson 2	___	___
Lesson 3	___	___
Lesson 4	___	___
Lesson 5	___	___
Lesson 6	___	___
Lesson 7	___	___
Lesson 8	___	___

Comment:

CURRICULUM B

1. Curriculum B is a resource which provides the theme material from which the teacher must plan the lessons. Please comment on the material using the following questions to direct your assessment.

   a. Is there sufficient theme material included to develop the theme of balance?

   b. Is the theme material that is included sufficiently detailed or not sufficiently detailed to develop the theme of balance?

c. Does the theme material lead logically to the development of the nine instructional objectives? (Check and comment)

	Material is Logical	Material is not Logical
Ins. Objective A	___	___
Ins. Objective B	___	___
Ins. Objective C	___	___
Ins. Objective D	___	___
Ins. Objective E	___	___
Ins. Objective F	___	___
Ins. Objective G	___	___
Ins. Objective H	___	___
Ins. Objective I	___	___

Comment:

d. If there is an Instructional Objective that appears not to be able to be developed given the theme material present, can you indicate which instructional objective?

e. What theme material might be added to more adequately develop this (these) instructional objectives?

EVALUATION

1. Comment on the evaluation procedure suggested for each of the curricula - A, B, and C.

TEACHING SUGGESTIONS

1. Curriculum A and Curriculum B include basically the same outline of Teaching Suggestions. Comment on the clarity of language used, the amount of suggestions included, and the potential of the suggestions in aiding teachers.

TEACHING SUGGESTION

	Curriculum A		Curriculum B	
	Satisfactory	Not Satisfactory	Satisfactory	Not Satisfactory
Clarity of Language Used	___	___	___	___
Amount of Suggestions Included	___	___	___	___
Potential of Suggestions to Aid Teachers	___	___	___	___

Comments:

GENERAL

1. Is the theme material in Curriculum A and Curriculum B sufficient, insufficient or too much for a two-week unit (probably two classes per week)?

	Not Sufficient	Sufficient	Too Much
Curriculum A	___	___	___

Comment:

	Not Sufficient	Sufficient	Too Much
Curriculum B Comment:	___	___	___

2. In the lesson plans in Curriculum A, and in the theme material in Curriculum B, there are aspects or dimensions of the theme of balance that have been stressed. Please indicate how you feel about the detail of each of these dimensions by checking the appropriate blank and commenting if you desire. Please begin with Curriculum A.

Curriculum A

	Not Enough Detail	Enough Detail	Too Much Detail
Weight bearing on body parts (large and small)	___	___	___
Arm Work	___	___	___
Leg Work	___	___	___
Whole Body	___	___	___
Arriving into Balance	___	___	___
Body Shapes	___	___	___
Maintaining Balance	___	___	___
Leaving Balance	___	___	___
Timing, Speed, Tension and Flow	___	___	___
Directions	___	___	___
Pathways	___	___	___
Sequences	___	___	___
Routines	___	___	___
Apparatus Work	___	___	___
Partner Work	___	___	___

Comment:

3. Please assess Curriculum B with regard to the same dimensions.

	Curriculum B		
	Not Enough Detail	Enough Detail	Too Much Detail
Weight bearing on body parts (large and small)	___	___	___
Arm Work	___	___	___
Leg Work	___	___	___
Whole Body	___	___	___
Arriving into Balance	___	___	___
Body Shapes	___	___	___
Maintaining Balance	___	___	___
Leaving Balance	___	___	___
Timing, Speed, Tension and Flow	___	___	___
Directions	___	___	___
Pathways	___	___	___
Sequences	___	___	___
Routines	___	___	___
Apparatus Work	___	___	___
Partner Work	___	___	___

Comment:

4. Is the theme material provided in Curriculum A, B and C appropriate for Division II children, aged 9 or 10?

	Appropriate	Inappropriate	Don't Know
Currirulum A	___	___	___
Curriculum B	___	___	___
Curriculum C	___	___	___

Comment:

5. Considering everything you've told me in this questionnaire, please comment on these questions:

How valuable is this work on balance in:

Curriculum A:

Curriculum B:

Curriculum C:

What might be some potential difficulties teachers would have with:

Curriculum A:

Curriculum B:

Curriculum C:

6. Comment on how this questionnaire has helped or hindered your analysis of the curricula.

Thank you for your interest in this work and for the time you have taken to help me.

Bernie Potvin

APPENDIX H

FIVE CATEGORIES - ATTITUDES

(REPRESENTATION OF THE VARIABLES OF TEACHER ATTITUDES TOWARDS GYMNASTICS AND TO THE THEME OF BALANCE)

APPENDIX H

FIVE CATEGORIES - ATTITUDES
(REPRESENTATION OF THE VARIABLES OF TEACHER ATTITUDES TOWARDS GYMNASTICS AND TO THE THEME OF BALANCE)

1. Teacher Attitudes Toward Selected Aspects of the Teaching Process Typically Associated with Elementary School Gymnastics at the Division Two Level.

2. Teacher Attitudes Toward the Value of Gymnastics for Children.

3. Teacher Attitudes Toward the Curriculum Materials Presently Used in Elementary Schools.

4. Teacher Attitudes Toward Gymnastics as a Viable Subject in the Elementary School Curriculum.

5. Teacher Attitudes Regarding the Theme of Balance.

APPENDIX I

ORIGINAL TWENTY THREE COMPONENTS AND VALIDATION WEIGHTINGS (REPRESENTATION OF THE SELECTED ATTITUDE CATEGORIES AND THE VARIABLES OF TEACHER ATTITUDES TOWARD GYMNASTICS AND TO THE THEME OF BALANCE)

APPENDIX I

ORIGINAL TWENTY THREE COMPONENTS AND VALIDATION WEIGHTINGS (REPRESENTATION OF THE SELECTED ATTITUDE CATEGORIES AND THE VARIABLES OF TEACHER ATTITUDES TOWARD GYMNASTICS AND TO THE THEME OF BALANCE)

I. Teacher Attitudes Toward Selected Aspects of the Teaching Process Typically Associated with Elementary School Gymnastics at the Division Two Level.

	strongly agree	agree	undecided	disagree	strongly disagree	total
Weightings	+2	+1	0	−1	−2	
A. Teacher attitudes toward the teaching of gymnastics as an enjoyable endeavour.	1	2	3	4	5	+4
B. Teacher attitudes toward the effort involved in teaching gymnastics.	1	2	3	4	5	+3
C. Teacher attitudes toward their own perceived state of competence in teaching gymnastics.	1	2	3	4	5	+4
D. Teacher attitudes toward the problem solving approach that has been advocated for teaching gymnastics by selected authors.	1	2	3	4	5	+4
E. Teacher attitudes toward selected strategies and procedures that may be employed in a gymnastics lesson to realize aims and objectives.	1	2	3	4	5	+3
F. Teacher attitudes toward developing and improving teaching practices in gymnastics.	1	2	3	4	5	+3
G. Teacher attitudes toward constraints and difficulties that are perceived as being associated with teaching gymnastics.	1	2	3	4	5	+4
H. Teacher attitudes toward benefits that are perceived as being associated with teaching of their own gymnastics classes.	1	2	3	4	5	+1

II. Teacher Attitudes Toward the Value of Gymnastics for Children.

	strongly agree	agree	undecided	disagree	strongly disagree	total
Weightings	+2	+1	0	-1	-2	
A. Teacher attitudes toward the enjoyment children derive from gymnastics.	1	2	3	4	5	+4
B. Teacher attitudes toward selected aspects of a gymnastics lesson assisting children in realizing objectives.	1	2	3	4	5	+3
C. Teacher attitudes toward the achievement and performance by children in gymnastics.	1	2	3	4	5	+4
D. Teacher attitudes toward the educational contributions of gymnastics in meeting selected aims and objectives outlined in the Program of Studies.	1	2	3	4	5	+5

III. Teacher Attitudes Toward the Curriculum Materials Presently Used in Schools.

	strongly agree	agree	undecided	disagree	strongly disagree	total
Weightings	+2	+1	0	-1	-2	
A. Teacher attitudes as recipients of preplanned curriculum materials for teaching gymnastics.	1	2	3	4	5	+5
B. Teacher attitudes toward sources of preplanned curriculum materials.	1	2	3	4	5	+5
C. Teacher attitudes toward the clarity of content in preplanned curriculum materials.	1	2	3	4	5	+5
D. Teacher attitudes toward the various formats of preplanned curriculum materials.	1	2	3	4	5	+4
E. Teacher attitudes toward perceived success in implementation in relation to curriculum materials used.	1	2	3	4	5	+6

IV. Teacher Attitudes Toward Gymnastics as a Viable Subject in the Elementary School Curriculum.

	strongly agree	agree	undecided	disagree	strongly disagree	total
Weighting	+2	+1	0	-1	-2	
A. Teacher attitudes toward the status of gymnastics in relation to other school subjects	1	2	3	4	5	+3
B. Teacher attitudes toward the implied or stated purposes in gymnastics.	1	2	3	4	5	+6
C. Teacher attitudes toward the subject content of Division Two gymnastics at the Elementary School Level	1	2	3	4	5	+5
D. Teacher attitudes toward selected elements common to any gymnastic-type activity.	1	2	3	4	5	+1

V. Teacher Attitudes Regarding the Theme of Balance.

	strongly agree	agree	undecided	disagree	strongly disagree	total
Weightings	+2	+1	0	-1	-2	
A. Teacher attitudes toward the skills achieved by children in work on the theme of balance.	1	2	3	4	5	+5
B. Teacher attitudes toward preparation for instruction of the theme of balance.	1	2	3	4	5	+5

APPENDIX J

FINAL SIXTEEN COMPONENTS

(REPRESENTATION OF THE SELECTED ATTITUDE CATEGORIES: RECEIVING WEIGHTINGS OF +4 OR HIGHER)

APPENDIX J

FINAL SIXTEEN COMPONENTS
(REPRESENTATION OF THE SELECTED ATTITUDE CATEGORIES: RECEIVING WEIGHTINGS OF +4 OR HIGHER)

I. Teacher Process Towards Selected Aspects of the Teaching Process Typically Associated with Division Two Gymnastics.

Component	Weighting
A. Teaching attitudes toward the teaching of gymnastics as an enjoyable endeavour	+4
C. Teacher attitudes toward their own perceived state of competence in teaching gymnastics	+4
D. Teacher attitudes toward the problem-solving approach that has been advocated for teaching gymnastics by selected authors	+4
G. Teacher attitudes toward constraints and difficulties that are perceived as being associated with teaching gymnastics	+4

II. Teacher Attitudes Toward the Value of Gymnastics for Children.

A. Teacher attitudes toward the enjoyment children derive from gymnastics	+4
C. Teacher attitudes toward the achievement and performance by children in gymnastics	+4
D. Teacher attitudes toward the educational contributions of gymnastics in meeting selected aims and objectives outlined in the Program of Studies	+5

III. Teacher Attitudes Toward the Curriculum Materials Presently Used in Schools.

A. Teacher attitudes as recipients of prepared curriculum materials for teaching gymnastics	+5
B. Teacher attitudes toward sources of prepared curriculum materials	+5
C. Teacher attitudes toward the clarity of content in preplanned curriculum materials	+5
D. Teacher attitudes toward the various formats of preplanned curriculum materials	+4

Component	Weighting
E. Teacher attitudes toward perceived success of implementation in relation to curriculum materials used	+4
IV. Teacher Attitudes Toward Gymnastics as a Viable Subject in the Elementary School Curriculum.	
B. Teacher attitudes toward the implied or stated purposes in gymnastics	+6
C. Teacher attitudes toward the subject content of Division Two gymnastics at the elementary school level	+5
V. Teacher Attitudes Regarding the Theme of Balance.	
A. Teacher attitudes toward the skills achieved by children in work on the theme of balance	+5
B. Teacher attitudes toward preparation for instruction of the theme of balance	+5

APPENDIX K

ORIGINAL NINETY-FIVE ATTITUDE ITEMS

APPENDIX K

ORIGINAL NINETY-FIVE ATTITUDE ITEMS

Attitudes of Teachers Toward Elementary School Gymnastics

	strongly agree	agree	undecided	disagree	strongly disagree
1. I enjoy teaching elementary school gymnastics.	1	2	3	4	5
2. I look less forward to teaching my class gymnastics than games.	1	2	3	4	5
3. I have fun with my children in gymnastics classes.	1	2	3	4	5
4. Teaching gymnastics has left me frustrated.	1	2	3	4	5
5. A problem-solving approach in gymnastics is worth the time and effort it requires.	1	2	3	4	5
6. Teaching gymnastics demands an excessive investment of time and effort by a classroom teacher.	1	2	3	4	5
7. I am able to motivate my children to achieve objectives in gymnastics.	1	2	3	4	5
8. I work harder at teaching academic subjects than I do at teaching gymnastics.	1	2	3	4	5
9. I am quite able, by my own volition, to improve my teaching of gymnastics.	1	2	3	4	5
10. It is a concern of mine that I should try to improve my teaching of gymnastics.	1	2	3	4	5
11. I am relatively ineffective in teaching gymnastics.	1	2	3	4	5

	strongly agree	agree	undecided	disagree	strongly disagree
12. I would feel uncomfortable in having a consultant or supervisor observe my past two months' work in gymnastics.	1	2	3	4	5
13. I am able and knowledgeable enough in gymnastics to decide what to teach in gymnastics.	1	2	3	4	5
14. I understand the movement education approach to teaching gymnastics.	1	2	3	4	5
15. The new physical education approach has left me frustrated.	1	2	3	4	5
16. I am comfortable in setting a problem and letting children work on their own to solve it in gymnastics.	1	2	3	4	5
17. Demonstrations by children at the Grade 4 level results in limited educational benefit for either demonstrators or observers.	1	2	3	4	5
18. I need to be able to watch all children at all times in gymnastics lessons.	1	2	3	4	5
19. The teacher's ability to demonstrate a skill is important in gymnastics.	1	2	3	4	5
20. I seem to focus, in my teaching in gymnastics, on the skillful children.	1	2	3	4	5
21. I lack confidence in having children work on large apparatus like box horses and trestles.	1	2	3	4	5
22. Children learn better in gymnastics if they are shown the correct skill.	1	2	3	4	5
23. I am interested in learning new teaching approaches in gymnastics.	1	2	3	4	5

	strongly agree	agree	undecided	disagree	strongly disagree
24. A gymnastics inservice program would be low on my priority list for professional development.	1	2	3	4	5
25. I can be successful in teaching gymnastics without supervisory help, etc. if I have clearly written methods for planning and teaching.	1	2	3	4	5
26. Practical constraints (like shortage of class time and setting up apparatus) are things which have a major negative effect on my teaching of gymnastics.	1	2	3	4	5
27. The diversity of children's ability is something that frustrates me in teaching gymnastics.	1	2	3	4	5
28. I believe that older teachers, for any number of reasons, might be less able to teach gymnastics than younger ones.	1	2	3	4	5
29. Gymnastics classes lend themselves to children's developing good discipline.	1	2	3	4	5
30. Teaching gymnastics provides me with very few useful teaching strategies that I can apply to other subjects.	1	2	3	4	5
31. Teaching gymnastics contributes to my greater understanding of individual children.	1	2	3	4	5
32. A specialist is necessary to teach gymnastics.	1	2	3	4	5
33. Gymnastics is a subject that children enjoy.	1	2	3	4	5
34. It is unrealistic to expect that children will experience a sense of achievement in every gymnastics lesson.	1	2	3	4	5

	strongly agree	agree	undecided	disagree	strongly disagree
35. Grade 4 children are ready and able to work with a partner on apparatus.	1	2	3	4	5
36. Grade 4 children learn best in gymnastics by solving problems.	1	2	3	4	5
37. It is beyond the capability of a classroom teacher to be able to challenge every child in a gymnastics lesson to high levels of individual accomplishment.	1	2	3	4	5
38. Children's finished work in gymnastics classes can be expected to look pleasing and aesthetic.	1	2	3	4	5
39. It is too much to expect Grade 4 children to achieve mastery of skills in gymnastics.	1	2	3	4	5
40. Gymnastics necessitates that all children be led to accomplish the same specified objectives.	1	2	3	4	5
41. I believe that every child in my class can produce a gymnastics sequence that a parent would be pleased to watch.	1	2	3	4	5
42. Gymnastics is of inherent value to children.	1	2	3	4	5
43. Girls derive greater benefits from gymnastics than boys.	1	2	3	4	5
44. Gymnastics can significantly contribute to a child's development of acceptable attitudes and behaviour in his overall school work.	1	2	3	4	5
45. I can see how broad benefits such as self-control and confidence can be derived through gymnastics.	1	2	3	4	5
46. Children learn a great deal about cooperation through gymnastics.	1	2	3	4	5

	strongly agree	agree	undecided	disagree	strongly disagree
47. Children can learn self-control as they use and respect the challenge of the equipment in gymnastics.	1	2	3	4	5
48. There is little that can occur through gymnastics that can contribute to the relationship children have with a teacher.	1	2	3	4	5
49. It is less important that children gain knowledge about gymnastics than it is that they achieve actual skills themselves.	1	2	3	4	5
50. The value children might gain in working on apparatus is outweighed by the dangers.	1	2	3	4	5
51. What concerns me about gymnastics is that it doesn't appear to be practical.	1	2	3	4	5
52. I appreciate receiving curriculum materials for use in teaching gymnastics.	1	2	3	4	5
53. I should have a greater say in decisions as to what types of curriculum materials I receive for use in teaching gymnastics.	1	2	3	4	5
54. There is a lack of worthwhile curriculum materials available for my use in gymnastics.	1	2	3	4	5
55. A curriculum resource or unit in gymnastics could never be as valuable as, let's say, consultative help in my teaching of gymnastics.	1	2	3	4	5
56. I can teach gymnastics effectively from preplanned curriculum materials.	1	2	3	4	5
57. Teachers can learn a great deal about a particular gymnastics concept like balance, just from preplanned curriculum materials.	1	2	3	4	5
58. I am unhappy with the types of curriculum materials that are available for use in gymnastics.	1	2	3	4	5

	strongly agree	agree	undecided	disagree	strongly disagree
59. The value of curriculum materials in a subject area like gymnastics, are of value only to the people who developed them.	1	2	3	4	5
60. The type of curriculum material I use can affect my attitude towards gymnastics.	1	2	3	4	5
61. I value information and facts about the topics and themes in gymnastics more than I do information on how to teach it.	1	2	3	4	5
62. The theory behind the gymnastics theme to be taught is vital for me to understand before teaching.	1	2	3	4	5
63. That I am able to understand the movement education approach to teaching gymnastics from curriculum materials alone is an unreasonable assumption.	1	2	3	4	5
64. I prefer to have curriculum materials that I can refer to quickly, that require no great amount of reading.	1	2	3	4	5
65. The greater the specificity and detail in curriculum materials in gymnastics the better.	1	2	3	4	5
66. The theory behind the gymnastics theme to be taught is vital for me to understand before teaching.	1	2	3	4	5
67. Preplanned curriculum materials are weak in making clear how to actually realize objectives in gymnastics.	1	2	3	4	5
68. Objectives in gymnastics should be stated behaviourally.	1	2	3	4	5
69. Prepared lesson plans are the types of curriculum materials that I feel can help the most for gymnastics.	1	2	3	4	5

	strongly agree	agree	undecided	disagree	strongly disagree
70. I know how curriculum materials should be written to be of the most use to me in gymnastics.	1	2	3	4	5
71. There are differences between what the Program of Studies recommends that I should be doing in gymnastics, and what I actually do.	1	2	3	4	5
72. If I were to prepare my own curriculum materials for gymnastics I would be unaware as to which parts of the lesson plan should receive my greatest attention.	1	2	3	4	5
73. Curriculum materials contribute positively to my teaching performance in gymnastics.	1	2	3	4	5
74. Gymnastics is as educationally a valuable component as music, art or drama.	1	2	3	4	5
75. Gymnastics is as worthwhile an activity in physical education as, let's say, games.	1	2	3	4	5
76. There is potential for integration of gymnastics work with academic subjects like language arts.	1	2	3	4	5
77. My attitude towards gymnastics as a subject area in the school curriculum will probably not change too much in the next year or so.	1	2	3	4	5
78. Gymnastics is a subject that is primarily concerned with children's exploring and experimenting with the management of their bodies in a variety of situations.	1	2	3	4	5
79. Gymnastics has its main value in that it is a necessary break from academic subjects.	1	2	3	4	5
80. Gymnastics provides for more than just acquisition of certain physical skills.	1	2	3	4	5

	strongly agree	agree	undecided	disagree	strongly disagree
81. The objectives for children inherent in the subject - gymnastics, are clear.	1	2	3	4	5
82. Gymnastics is an inherently dangerous activity.	1	2	3	4	5
83. I am eager to develop a better understanding of the subject - gymnastics.	1	2	3	4	5
84. I am confused by what is expected in gymnastics at the elementary school level.	1	2	3	4	5
85. The idea of themes used in gymnastics is unclear to me.	1	2	3	4	5
86. There is clearly a core of teaching content that I recognize in gymnastics.	1	2	3	4	5
87. Understanding how to use apparatus in gymnastics in difficult.	1	2	3	4	5
88. The place and value of partner work in gymnastics is unclear to me.	1	2	3	4	5
89. Expecting any finished, polished sequence or routine of gymnastic-type actions by Grade 4 children on apparatus is unreasonable.	1	2	3	4	5
90. I could communicate to a parent what children should be learning in a unit of work on balance.	1	2	3	4	5
91. Balance is too elementary a concept for Grade 4 children.	1	2	3	4	5
92. I question whether there is enough intrinsically associated with balance to hold children's interest for more than two or three lessons.	1	2	3	4	5

	strongly agree	agree	undecided	disagree	strongly disagree
93. It is wasteful to spend lesson time on floor activities in gymnastics; apparatus work is "where it's at".	1	2	3	4	5
94. Children in Grade 4 can be expected to understand clearly and fully a gymnastics concept like balance.	1	2	3	4	5
95. I need to have clear, complete and detailed understanding of a particular concept like balance before I can teach it.	1	2	3	4	5

APPENDIX L

VALIDATION QUESTIONNAIRE

APPENDIX L

VALIDATION QUESTIONNAIRE

QUESTIONS FOR VALIDATION SUBMITTED TO NON-SPECIALIST TEACHERS IN PHYSICAL EDUCATION REGARDING ATTITUDE AND PERCEIVED KNOWLEDGE QUESTIONNAIRES

1. Please comment on:

   a) the clarity and worth of the diagnostic guide in directing your response for each item,

   b) the ease with which you were able to respond to the five-point scale,

   c) your understanding of the intent implicit in each item,

   d) the clarity of each item.

APPENDIX M

ATTITUDE QUESTIONNAIRE

(CATEGORIES AND COMPONENTS)

APPENDIX M

ATTITUDE QUESTIONNAIRE

(CATEGORIES AND COMPONENTS)

Questionnaire Regarding a Teacher's Attitudes Towards Division II Gymnastics

Indicate on the five-point scale which follows each question, what your attitude is regarding that question. For your self-diagnostic guide, the numbers on the continuum indicate your degree of agreement or disagreement of that item.

1. - Strongly agree with the statement

2. - Agree with the statement

3. - Undecided about the statement

4. - Disagree with the statement

5. - Strongly disagree with the statement

		Items	strongly agree	agree	undecided	disagree	strongly disagree
IIC	1.	Children's gymnastics sequences should be pleasing to look at.	1	2	3	4	5
IVA	2.	There is a lack of useful curriculum materials for elementary school gymnastics.	1	2	3	4	5
VA	3.	Communicating to a parent what children should learn in a theme like balance is difficult.	1	2	3	4	5
IG	4.	The teacher's ability to demonstrate a skill in gymnastics is important.	1	2	3	4	5
IVC	5.	It is necessary to know how to use themes in order to teach gymnastics.	1	2	3	4	5
IIIE	6.	The content of my gymnastics classes differs from what the Program of Studies recommends.	1	2	3	4	5
IIIC	7.	It is important to understand a gymnastics theme or topic before teaching it.	1	2	3	4	5
IA	8.	I enjoy teaching elementary school gymnastics.	1	2	3	4	5
IC	9.	I would feel uncomfortable if a supervisor observed my work in gymnastics.	1	2	3	4	5
IA	10.	I have fun with my children in gymnastics classes	1	2	3	4	5
IIIB	11.	I am able to teach gymnastics from someone else's preplanned curriculum materials.	1	2	3	4	5
IIID	12.	Someone else's preplanned lesson materials are best for my teaching of gymnastics.	1	2	3	4	5

		Items	strongly agree	agree	undecided	disagree	strongly disagree
VA	13.	Children can be expected to understand a concept like balance from their own work on balance.	1	2	3	4	5
IVC	14.	Gymnastics is an inherently dangerous activity.	1	2	3	4	5
ID	15.	I prefer the movement education approach to teaching gymnastics.	1	2	3	4	5
IID	16.	Gymnastics is of inherent value to children.	1	2	3	4	5
IIIB	17.	Information about the content of gymnastics is more useful than information concerning appropriate methods.	1	2	3	4	5
IVB	18.	I understand the objectives in gymnastics for children.	1	2	3	4	5
IG	19.	A specialist teacher is required to teach gymnastics correctly.	1	2	3	4	5
VB	20.	It is necessary to understand a concept like balance before teaching it.	1	2	3	4	5
IIIC	21.	Someone else's preplanned curriculum materials are weak in showing me how to bring about their written objectives.	1	2	3	4	5
IVC	22.	I am unsure of what is expected by children in gymnastics.	1	2	3	4	5
IA	23.	The effort required to teach gymnastics correctly is excessive.	1	2	3	4	5
IIA	24.	Most children enjoy gymnastics.	1	2	3	4	5

	Items	strongly agree	agree	undecided	disagree	strongly disagree
IVB	25. The major value of gymnastics in the school setting is that it is a break from academic studies.	1	2	3	4	5
IG	26. Practical constraints (like shortage of class time, setting up apparatus) are aspects which make teaching gymnastics unpleasant.	1	2	3	4	5
IC	27. I am personally quite able to improve my own teaching of gymnastics.	1	2	3	4	5
IC	28. I am able to decide what to teach in gymnastics.	1	2	3	4	5
IID	29. Gymnastics is educationally valuable.	1	2	3	4	5

APPENDIX N

LIST OF TWELVE COMPONENTS REGARDING PERCEIVED KNOWLEDGE OF BALANCE

APPENDIX N

LIST OF TWELVE COMPONENTS REGARDING PERCEIVED KNOWLEDGE OF BALANCE

A. Teacher Perceived Knowledge Regarding Curriculum Materials in Division Two Work on the Theme of Balance.

B. Teacher Perceived Knowledge Regarding Aims for Division Two Work on the Theme of Balance.

C. Teacher Perceived Knowledge Regarding Setting Objectives for Division Two Work on the Theme of Balance.

D. Teacher Perceived Knowledge Regarding Selecting Content for Division Two Work on the Theme of Balance.

E. Teacher Perceived Knowledge Regarding Teaching Methods in Division Two Work on the Theme of Balance.

F. Teacher Perceived Knowledge Regarding Organizing a Lesson Division for Division Two Work on the Theme of Balance.

G. Teacher Perceived Knowledge Regarding Class Management in Division Two Teaching of the Theme of Balance.

H. Teacher Perceived Knowledge Regarding Evaluation in Division Two Work on the Theme of Balance.

I. Teacher Perceived Knowledge Regarding Using Observation in Division Two Work on the Theme of Balance.

J. Teacher Perceived Knowledge Regarding Using Apparatus in Division Two Work on Balance.

K. Teacher Perceived Knowledge Regarding Partner Work for Division Two Work in the Theme of Balance.

L. Teacher Understanding of the Theme of Balance in Division Two Gymnastics.

APPENDIX O

PERCEIVED KNOWLEDGE COMPONENTS AND QUESTIONNAIRE ITEMS (REPRESENTATION OF THE TWELVE COMPONENTS AND OF THE VARIABLE OF TEACHERS' PERCEIVED KNOWLEDGE REGARDING THE THEME OF BALANCE)

APPENDIX O

PERCEIVED KNOWLEDGE COMPONENTS AND QUESTIONNAIRE ITEMS (REPRESENTATION OF THE TWELVE COMPONENTS AND OF THE VARIABLE OF TEACHERS' PERCEIVED KNOWLEDGE REGARDING THE THEME OF BALANCE)

I. TEACHER PERCEIVED KNOWLEDGE REGARDING THE THEME OF BALANCE

A. Curriculum Materials in Division Two Work on the Theme of Balance

	no knowledge	a little knowledge	sufficient knowledge	comprehensive knowledge
1. Concerning my understanding of prepared curriculum materials regarding balance I feel I have	1	2	3	4
2. Concerning preparing gymnastics activities in balance from prepared curriculum materials I feel I have	1	2	3	4

B. Teacher Perceived Knowledge Regarding Aims for Division Two Work on the Theme of Balance

3. Concerning the knowledge children should have about balance I feel I have	1	2	3	4
4. Regarding the educational value of the theme of balance I feel I have	1	2	3	4

C. Teacher Perceived Knowledge Regarding Setting Objectives for Division Two Work on the Theme of Balance

5. Concerning the steps in the build-up of the use of apparatus for balance I feel I have	1	2	3	4
6. Concerning children performing individual sequences with balance I feel I have	1	2	3	4

	no knowledge	a little knowledge	sufficient knowledge	comprehensive knowledge
D. Teacher Perceived Knowledge Regarding Selecting Content for Division Two Work on the Theme of Balance				
7. Concerning the use of themes that should precede and follow the theme of balance I feel I have	1	2	3	4
8. Concerning my choosing appropriate warmup activities in teaching balance I feel I have	1	2	3	4
E. Teacher Perceived Knowledge Regarding Teaching Methods for Division Two Work on the Theme of Balance				
9. Concerning the appropriate use of problem-solving and exploration for balance lessons I feel I have	1	2	3	4
10. Concerning the use of demonstrations I feel I have	1	2	3	4
F. Teacher Perceived Knowledge Regarding Organizing a Lesson for Division Two Teaching of the Theme of Balance				
11. Concerning the organization of a lesson to get the best results from my children in balance I feel I have	1	2	3	4
12. Concerning questioning my children to help them improve in their work on balance I feel I have	1	2	3	4
G. Teacher Perceived Knowledge Regarding Class Management in Division Two Teaching of the Theme of Balance				
13. Concerning organizing my children to do balance work on apparatus I feel I have	1	2	3	4
14. With respect to achieving maximum activity and participation by my children in lessons on balance I feel I have	1	2	3	4

	no knowledge	a little knowledge	sufficient knowledge	comprehensive knowledge
H. Teacher Perceived Knowledge Regarding Evaluation in Division Two Work on the Theme of Balance				
15. Regarding what to look for in evaluating my children's work in balance I feel I have	1	2	3	4
16. With respect to the variety of ways to evaluate children's work in balance I feel I have	1	2	3	4
I. Teacher Perceived Knowledge Regarding Observation in Division Two Work on the Theme of Balance				
17. With respect to what I should be observing to improve my children's work on balance I feel I have	1	2	3	4
18. With respect to what to look for to ensure safety I feel I have	1	2	3	4
J. Teacher Perceived Knowledge Regarding Apparatus Work in Division Two Work on the Theme of Balance				
19. With respect to the types of apparatus children can use for balance activities I feel I have	1	2	3	4
20. With respect to children's applying balance onto apparatus I feel I have	1	2	3	4
K. Teacher Perceived Knowledge Regarding Partner Work in Division Two Work on the Theme of Balance				
21. With respect to the variety of ways that my children can work with a partner I feel I have	1	2	3	4
22. Concerning the value of partner work I feel I have	1	2	3	4

L. Teacher Understanding of the Theme of Balance in Gymnastics at the Division Two Level

	no knowledge	a little knowledge	sufficient knowledge	comprehensive knowledge
23. With respect to what is meant by the theme of balance I feel I have	1	2	3	4
24. With respect to other movement concepts which help develop the balance theme I feel I have	1	2	3	4

APPENDIX P

PERCEIVED KNOWLEDGE QUESTIONNAIRE

(QUESTIONNAIRE REGARDING TEACHER'S PERCEIVED KNOWLEDGE REGARDING THE THEME OF BALANCE IN DIVISION II GYMNASTICS)

APPENDIX P

PERCEIVED KNOWLEDGE QUESTIONNAIRE

(Questionnaire Regarding Teacher's Perceived Knowledge
Regarding the Theme of Balance in
Division II Gymnastics)

Indicate on the four-point scale which follows, each question, what you perceive your present knowledge to be regarding elementary school gymnastics. For your self-diagnostic guide, the numbers on the continuum mean the following:

1. - No Knowledge - you feel completely unaware about this aspect of elementary school gymnastics

2. - A Little Knowledge - you are aware of this aspect of elementary school gymnastics, but are unsure of particulars, and theory concerning this aspect

3. - Sufficient Knowledge - you have a sufficient awareness about this aspect of elementary school gymnastics. You know the aspect, the theory, concept and details concerning the aspect

4. - Comprehensive Knowledge - you have in depth and detailed awareness about this aspect of elementary school gymnastics. Your colleagues and peers could gain knowledge from you regarding this aspect

The following statements are designed to have you indicate what you feel your knowledge is regarding a variety of aspects associated with teaching the theme of balance. Read each statement and circle the appropriate number which follows it regarding your level of knowledge for that item.

	no knowledge	a little knowledge	sufficient knowledge	comprehensive knowledge
1. Concerning the knowledge children should have about balance I feel I have	1	2	3	4
2. Concerning questioning my children to help them improve in their work on balance I feel I have	1	2	3	4
3. Regarding the process used in evaluating my children's work in balance I feel I have	1	2	3	4
4. With respect to what I should be observing to improve my children's work on balance I feel I have	1	2	3	4
5. With respect to the types of apparatus children can use for balance activities I feel I have	1	2	3	4
6. With respect to what is meant by the theme of balance I feel I have	1	2	3	4
7. Concerning my understanding of prepared curriculum materials regarding balance I feel I have	1	2	3	4
8. Regarding the educational value of the theme of balance I feel I have	1	2	3	4
9. Concerning my choosing appropriate warmup activities in teaching balance I feel I have	1	2	3	4
10. Concerning the use of demonstrations I feel I have	1	2	3	4
11. With respect to what to look for to ensure safety I feel I have	1	2	3	4

	no knowledge	a little knowledge	sufficient knowledge	comprehensive knowledge
12. With respect to children's applying balance onto apparatus I feel I have	1	2	3	4
13. Concerning the appropriate use of problem-solving and exploration for balance lessons I feel I have	1	2	3	4
14. With respect to achieving maximum activity and participation by my children in lessons on balance I feel I have	1	2	3	4
15. Concerning the steps in the build-up of the use of apparatus for balance I feel I have	1	2	3	4
16. With respect to the variety of ways to evaluate children's work in balance I feel I have	1	2	3	4
17. Concerning organizing my children to do balance work on apparatus I feel I have	1	2	3	4
18. Concerning the children's performing individual sequences with balance I feel I have	1	2	3	4
19. Concerning preparing gymnastics activities in balance from preplanned curriculum materials I feel I have	1	2	3	4
20. Concerning the use of themes that should precede and follow the theme of balance I feel I have	1	2	3	4
21. With respect to other movement concepts which help develop the balance theme I feel I have	1	2	3	4
22. Concerning the value of partner work I feel I have	1	2	3	4

	no knowledge	a little knowledge	sufficient knowledge	comprehensive knowledge
23. Concerning the organization of a lesson to get the best results from my children in balance I feel I have	1	2	3	4
24. With respect to the variety of ways that my children can work with a partner I feel I have	1	2	3	4

APPENDIX Q

IN-PERSON INTERVIEW QUESTIONNAIRE SCHEDULE

APPENDIX Q

IN-PERSON INTERVIEW QUESTIONNAIRE SCHEDULE

Respondents were met at a mutually agreed-upon location. Attempts were made to accommodate teachers, so a variety of times and locations were agreed upon, including teachers' schools, homes and the researcher's office at the University of Alberta.

Interviews were conducted while seated, with the respondent approximately one meter from the interviewer. This distance helped reduce the detached formality of a tape-recorded interview. Each respondent was read the introduction to the interview.

Introduction to the Interview

"Let me review briefly what this research and this interview are about. I am looking at gathering some information about the teaching materials used for elementary school gymnastics. You are one of nine teachers selected randomly for this interview, from the thirty who used a curriculum for gymnastics over these past four weeks. The purpose of the interview is to pursue some of the areas concerning this curriculum and your use of it."

"Do you mind if we tape-record the interview? I'll attempt to write down as much of what is said, but verbatim transcripts might be lost this way. I'll need to go back over the tapes to pick up what I am unable to write down."

"Remember, you are helping me, I'm interested in your opinions."

PART I - THE CURRICULUM

1. Did you read the curriculum from beginning to end? Or did you read various components as you needed them?
   Probe: (Fit together, expand on each other . . .).

2. Did the curriculum give enough information for you to understand the theme of balance?

3. What insights about the theme of balance did the curriculum give you that were new to you?
   Probe: (Developing the theme, types of balance possible, difficulties in balancing in).

4. Did the curriculum give enough information for you to work effectively with children?

5. What insights about working with children did the curriculum give you?

6. Did your feelings toward the curriculum change throughout the four weeks? How?

7. If I were to give this package of materials to other teachers, what do you think should change?
   Probe: (added, deleted, reworked . . .).

8. Would you have preferred to use this material over a different time span?

9. Have your attitudes changed toward gymnastics? How?

PART II - THE COMPONENTS FOR EACH CURRICULUM

10. Which components did you use the most? Why were these useful to you?

11. Which components did you use the least? Why were these components less useful to you?

12. Were there components which held you back or inhibited you?
    Probe: (caused you to not progress towards the objectives?

13. Would you have appreciated more material in any one component?

14. Would you have wanted to be involved in the development of these materials?
    Probe: (prior to use, during use, after use).

15. Which components would you have preferred to develop yourself?

PART III - THE LESSON PLAN COMPONENT

CURRICULUM A

16. How useful were the lesson plans?

17. Would you have preferred to develop your own lesson plans?

18. Could you have planned your own lesson plans on the basis of the other materials I gave you?

PART III - THE THEME MATERIAL COMPONENTS

CURRICULUM B

16. How useful was the theme material?

17. Would you have preferred to develop your own theme material?

18. Were you able to plan your own lessons on the basis of the theme material?

19. How did you feel about your own lesson plans?

20. Would you have preferred that I had given you a series of lesson plans?

CURRICULUM C

16. How useful was the material I gave you?

17. Were you able to plan your own lessons on the basis of the material?

18. How did you feel about your own lesson plans?

19. Would you have preferred that I had given you a series of lesson plans?

20. Would you have preferred that I had given you some theme material? (Coaching: A) Concepts, floorwork ideas, partner work ideas . . . B) Present theme material for observation).

21. Which of the two would you have preferred?

APPENDIX R

TELEPHONE INTERVIEW QUESTIONNAIRE

APPENDIX R

TELEPHONE INTERVIEW QUESTIONNAIRE

Respondents were contacted by telephone and times were arranged for the telephone interviews. Telephone interviews took place at the respondents' schools or homes.

Introduction to the Interview

"Let me review briefly what this research and interview are about. I am looking at gathering some information about the teaching materials used for elementary school gymnastics. You are one of twenty-one teachers selected randomly from the thirty who used a curriculum for gymnastics over the past four weeks. The purpose of the interview is to pursue some of the areas concerning the curriculum and your use of it."

"Do you mind the interview taking place over the telephone? I'm attempting to reduce travel costs and problems with matching your schedule with mine."

"Remember that you are helping me, I'm interested in your opinions.

THE TELEPHONE INTERVIEW

PART I - THE CURRICULUM

1. If I were to give this package of materials to another teacher, what do you think should change?

PART II - THE COMPONENTS FOR EACH CURRICULUM

2. Which components did you use the most? Why were these components more useful to you?

3. Which components did you use the least? Why were these components less useful to you?

PART III - CURRICULUM A, B, AND C

4. How useful were the lesson plans? How useful was the theme material? How useful was the material I gave you?